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*Media Collections and  
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PHYLLIS GERALDINE AHLSTED  
PAUL GRAHAM  
*Issue Editors*

# Library Trends

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# Library Trends

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# *Media Collections and Services in Academic Libraries*

PHYLLIS GERALDINE AHLSTED

PAUL GRAHAM

*Issue Editors*

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## Introduction

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PHYLLIS GERALDINE AHLSTED  
PAUL GRAHAM

IT IS GENERALLY AGREED that the basic purpose of the academic library is to provide collections and services in support of higher education. In the modern academic library, the addition of nontraditional resources has in many ways transformed our perception of its function. As Franklin Patterson noted in 1970:

The college library must not only reflect our whole culture, it must also *be* this culture. A library is not shelves of books, it is a process; it is communication in print, and today, we must add, in sound and in image. For we are no longer print-bound, and the library neglects these new media at its peril.<sup>1</sup>

Patterson's views are echoed throughout recent library literature.<sup>2</sup> Theorists have intellectually embraced the notion that academic libraries should include a variety of information resources. Indeed, *Library Trends* over the years has endorsed the premise that media collections are fundamental to library services. In 1967<sup>3</sup> and 1971,<sup>4</sup> issues were devoted to particular aspects of media. The earlier issue dealt specifically with the need to redefine the library function to encompass the "newer media," while the latter dealt with multimedia centers and the technology required to support them.

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Yet, despite the theoretical acceptance of media's validity among most commentators, practical implementation of that theory sometimes seems as elusive as ever. Especially in the case of audiovisual materials and services, the academic library community has often exhibited an ambivalence toward the inclusion of these materials into their world. It is impossible to attribute this dichotomy between theory and practice to a single cause. However, it may be worthwhile to consider briefly some of the fundamental factors which have contributed to the inconsistency.

While funding has always been a critical element in the successful implementation of media programs, library administrations often have not been adequately apprised of the need to make replacement monies available. Startup funding for media materials and services was plentiful during the 1960s, but that support must now be supplemented by budgetary assistance which allows for ongoing replacement and material costs. The widespread failure even to recognize that technology requires regular rejuvenation threatens to leave many media centers antiquated.

Along with the need to prepare for maintenance and guard against obsolescence, it is essential to experiment with the new technology. It is tempting, of course, to adopt a "wait-and-see" attitude, which perpetually anticipates lower costs and "just the right" hardware. However, such an attitude does not provide users with adequate services. Administrators must be willing to take risks from time to time and be prepared to budget for such necessities. As Edward G. Holley has observed: "No administrator should expect such new services to cost less money....It would be far better to say we need this improvement in the future to make this college a first-rate educational institution with more potential for its ultimate survival than to promise what one cannot deliver."<sup>5</sup>

Finally, the role that academic library personnel have played in integrating audiovisual materials has not necessarily been positive. The often unarticulated belief in the intrinsic superiority of printed materials is most evident among four-year and graduate institutions of higher learning. Holley has noted that two-year college librarians are typically more concerned with the opportunities offered by nonprint materials than are their counterparts elsewhere in higher education.<sup>6</sup>

Damon D. Hickey has attempted to pinpoint the factors which have led many academic librarians to view audiovisual materials with suspicion. He theorizes that:

Academic librarians may have a justifiable fear that those media could intrude upon already limited book budgets and introduce into the staff "media specialists" who will compete with them for scarce salary

## Introduction

dollars, just as community colleges are competing with traditional colleges and universities for scarce educational dollars.

But it is possible that the real problem is the "four-wall syndrome," the distance of many academic librarians from the instructional process. The very fact that the introduction of nonprint media into the library is as likely to bring groans as cheers from the staff testifies to this distance. The academic library has not entirely ceased to be a passive repository of books.... The idea of "selling" the library and its services to the classroom faculty, of working with these colleagues, not just in teaching students how to use the library, but also in assisting them to prepare and improve their own materials, has not caught on with most academic librarians.<sup>7</sup>

Media personnel themselves often contribute to misconceptions about audiovisual materials. The language of the field is replete with unnecessary jargon and may cause confusion. Educational technologists can become preoccupied with experimentation—a situation which lends itself to the view that the medium is sometimes more important than the message. An especially significant attitudinal bias, as B.J. Enright has stated, is that "it is disconcerting to note how little attention has been devoted to the library by those interested in educational technology, possibly stemming from a concentration on teaching and a failure to appreciate the library's role in relation to learning."<sup>8</sup>

Perhaps this mutual misunderstanding between librarians and media specialists has at its core a real uncertainty over whether media is in fact an important aspect of the academic library. From the issue editors' perspective, the pedagogical value of nonprint materials is evident. After all, since the 1950s almost every child in America has been affected by communication technologies. From the portable radio and record player, to television and the computer, learning both within and outside the educational setting has been influenced by audiovisual materials. It is only natural that students should expect these materials to be available in the classroom. Hickey notes that what we can expect from academic libraries is that: "As more students...come to college having learned as much from television as from either the spoken or the printed word, it is inevitable that educational changes will take place."<sup>9</sup>

What is involved, however, is not merely a case of satisfying the expectations of students who have grown up in a culture permeated by these new ways of imparting information. There are some solid reasons for providing audiovisual materials in the academic library, including:

1. *Cultural Enrichment.* Some academic institutions have limited access to cultural events. A media center can function as a cultural "laboratory"—a place where the college community can see plays and

paintings and hear symphonies and operas. This is most crucial as a means of enriching an undergraduate, liberal arts curriculum.

2. *Professional Studies*. Audiovisual materials have become essential tools for many disciplines. Medicine and dentistry are particularly dependent on media materials, as are teacher education and curriculum laboratories.

3. *Academic Research*. Audiovisual items have, so to speak, come out of the classroom and become substantive research materials. Social scientists and historians use them for live interrogation, and natural scientists find them to be a helpful method of documentation. The kinds of information derived from audiovisual formats are distinct and often cannot be duplicated in print. As Charles Osburn has suggested, although the academic library community has been slow to accept this emergence of media as an aid to scholarly work, that emergence has significant implications for collection growth and administrative policy.<sup>10</sup>

This issue of *Library Trends*, then, describes current developments in the structuring of media collections and services within the academic library, and illustrates how media constitutes an integral component of any balanced repository of educational resources. At the same time, it seeks to encourage among administrators, librarians, and other personnel a more sophisticated appreciation of the wealth of information—both in substance and style of presentation—included among the various audiovisual formats. Finally, the issue is intended to assist those wishing to plan, develop, and implement audiovisual services within their libraries.

Some of the problems identified in earlier assessments of audiovisual collections and services remain an obstacle to media center growth. Yet there have been enough important advances in the media field to warrant this comprehensive reevaluation. The Library of Congress' Optical Disk Pilot Program is one such development in that it represents an endorsement by the federal government of a new and exciting form of media technology. It also illustrates a change in attitude since the project includes print and nonprint components and thereby constitutes a major effort to treat both resources equally. As dynamic libraries look to offer services which reflect the current state of this technology, the importance of establishing balanced collections of the different varieties of information resources should become even more apparent. This issue considers the contributions which media materials can make in accomplishing that goal.

## Introduction

Our first task was to analyze the current status of media within academic libraries. This was accomplished through a national survey which Phyllis Ahlsted uses to draw conclusions and offer some recommendations. We then sought to apply typical academic library organizational functions such as funding, collection development, access, and networking to the special characteristics of media. Each of these topics has been dealt with respectively by John Raimo, Mitchell Whichard, Paul Graham, and Beverly Teach. Also included under this category is the article by Carol Hardy and Judith Sessions who offer a case study of media's role at the University of California—Chico.

Finally, we have looked at a number of general issues that contain particular implications for media. Ivan Bender writes on some ramifications for media of U.S. copyright law, Marie Griffin explores the value of media materials for academic research, and Thomas Wall discusses the crucial area of preservation and conservation. Our last two articles deal with futuristic issues, as Peter Wagschal considers interactive technologies and George Abbott investigates the library applications of laser technology.

We are much indebted to the authors for their work and spirit of cooperation. We only regret we never had the opportunity to meet with them collectively. In addition, we would like to acknowledge Joanne Hill and Erna Sansom for their help in typing the manuscripts and a special note of thanks to John Raimo for his guidance throughout this project.

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# A Survey of Media Facilities in Academic Libraries

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PHYLLIS GERALDINE AHLSTED

## Introduction

IN NOVEMBER 1979 New Jersey voters were asked on a bond issue referendum to provide Stockton State College with a new library addition. Anticipating an affirmative vote, library administrators encouraged staff members to participate in the overall expansion plans. Stockton's media center was targeted for extensive overhaul, and the media staff were charged with the responsibility of recommending design changes. To facilitate this task the staff searched for relevant literature using the ERIC database, *Library Literature*, standard bibliographies, and library design monographs. It soon became evident, however, that there had been virtually no research conducted on the place of media centers in academic libraries. In light of the pedagogical revolution in higher education involving the use of media and concomitant changes in libraries, this omission seemed even more remarkable.

Research therefore was undertaken to determine the state of media in other academic libraries. A survey was designed to study: (1) media collections and how they are arranged, accessed, and circulated; (2) staffing configurations; (3) space and funding allocations; and (4) other services offered within the media center. In choosing appropriate institutions for this study, the school's full-time equivalent student enrollment and the amount of media housed within the library determined each school's eligibility. The sample was selected from the 1980 edition of the *American Library Directory*.

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In 1980, questionnaires were mailed to 748 libraries. Despite defeat of the bond issue, research continued and by the end of 1982 a total of 363 usable questionnaires had been received, making a response rate of 49 percent. This was an adequate indicator of the state of media in academic libraries and with the help of staff and students the results were tabulated. The responses were organized into three categories and coded (see table 1). Since the main interest was in information concerning midrange schools—that is, schools with enrollments somewhere between 1001 and 8000 students—the majority of questionnaires went to those institutions. However, in order to give the survey a broader perspective, both larger and smaller schools were included within the sample. For the purpose of comparison, the data were eventually converted to percentages. (The survey is presented in its entirety in the appendix. Discussion and analysis of the data follow the same pattern as the survey.)

One defect of this survey is obvious—the data are now three to five years old. Pertinent subjects such as library automation, microcomputers, and the burgeoning video market have been either completely ignored or treated in a cursory fashion. Nevertheless, because academic libraries are plagued by the same ailment that has generally afflicted most institutions—namely, shrinking financial support—there have been relatively minor shifts in the emphasis or character of these institutions during the past few years. Thus, the information presented in this study remains useful and relevant to issues affecting media centers in academic libraries. It is hoped that the data offered here will provide a foundation for those planning for or evaluating the role of media in their academic library.<sup>1</sup>

### **Collection Composition and User Preferences**

The heart of a media center housed within an academic library is its collections. Not only do these collections offer the academic community another information resource, but they are critical in the design of educational programs. Consequently, it is important to understand the composition of the average media center—that is, what formats compose what percentages of the total collection—and to compare these findings with user preferences.<sup>2</sup>

Our data indicate that the average media center in an academic library consists of 36 percent audio materials, 55 percent visual materials, and 9 percent audiovisual materials. In order of preference, patrons use 16mm, video, audiocassettes, phonorecords, filmstrip kits,

*A Survey of Media Facilities*

TABLE 1

SURVEY OF MEDIA HOLDINGS IN ACADEMIC LIBRARIES:  
ENROLLMENT, REGION AND CHRONOLOGY

<i>Enrollment</i>	<i>No. of responses</i>
0-1000	45
1001-3500	146
3501-5000	45
5001-8000	58
8001-15,000	53
15,001-25,000	15
<i>Region</i>	<i>No. of responses</i>
New England	32
Mid-Atlantic	71
South	81
Mid-West	100
West	79
<i>Chronology (year founded)</i>	<i>No. of Responses</i>
17th and 18th Centuries	6
1800-1850	33
1851-1900	144
1901-1940	96
1941-present	84

sound slide sets, single slides, overhead transparencies, filmstrips, 8mm, and audio reel-to-reel tape.

Although there is a discrepancy between the user's preference for audiocassettes and the much higher percentage of phonorecords making up the total audio collection (see table 2), the overall results are not surprising. Since the audiocassette and its accompanying playback equipment have been perfected, the reel-to-reel format has become almost solely a production tool. A large variety of educational material is now available for purchase on cassette tape, and it is no secret that many institutions transfer their more popular record holdings onto cassette for circulation purposes. Although transferring from one medium to another without permission represents an outright copyright violation, it is nonetheless practiced.



TABLE 2  
AUDIO FORMATS

COLLECTIONS			
1. Audio reel-to-reel			9%
2. Audiocassettes			24%
3. Phonorecords			67%
USER PREFERENCES:	HIGH	MEDIUM	LOW
1. Audio reel-to-reel	5%	14%	81%
2. Audiocassettes	59%	30%	11%
3. Phonorecords	53%	29%	19%

It is understandable that the bulk of media collections are in the visual format category (see table 3). While it is common for a collection to contain hundreds of overhead transparencies and thousands of single slides, it is unusual for it to have equally large collections of 16mm films or videocassettes.

TABLE 3  
VISUAL FORMATS

COLLECTIONS			
1. 8mm films			2%
2. Filmstrip			9%
3. Overhead Transparencies			5%
4. Single Slides			84%
USER PREFERENCES	HIGH	MEDIUM	LOW
1. 8mm	6%	25%	69%
2. Filmstrip	19%	41%	40%
3. Overhead Transparencies	23%	31%	46%
4. Single Slides	31%	41%	28%

Slides are an old and popular medium. Given their broad applicability and the ease with which they are both purchased and produced, it is no wonder slides are the most preferred of the strictly visual media. The drawback to a collection of single slides is its management. Certainly a collection can grow quickly, but what was once a simple and inexpensive format eventually becomes a complex and expensive resource needing special handling and maintenance.

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Statistics from the survey show that the 8mm format is rarely collected or used. This is probably due to the limited nature of the 8mm film itself—it is brief, without sound, and difficult to employ in an instructional context. Patrons seem to like overhead transparencies more than the limited holdings of most collections would suggest. Filmstrips, on the other hand, are still used, but their popularity appears to be diminishing. This may be because users prefer either single slides, filmstrip kits, or sound slide sets, and not an in-between medium.

According to the survey, 16mm film is the preferred format, with video placing second (see table 4). Videotape does have its shortcomings. Some productions, such as certain art films, do not hold up well on videotapes, and viewing by large audiences is a problem without special equipment. Still, video may have surpassed 16mm as the most preferred format. This is due in large part to: (1) the increased educational offerings on three-quarter inch videotape, (2) the one-half inch videotape explosion, (3) the often dramatic price differences between film and video formats, and (4) the improvement of and greater user familiarity with video playback equipment. The data indicate that patrons prefer those formats which are self-contained. This is pertinent when considering media usage in a classroom context. If an instructor has to struggle with the material, it can hardly enhance the educational process. Thus a fundamental responsibility of the academic media center is to collect materials which serve the specific needs of faculty and students in higher education. This emphasis will help to transform the image of the media center from that of an entertainment facility to that of an important and legitimate pedagogical resource.

TABLE 4  
AUDIOVISUAL FORMATS

COLLECTIONS			
1. 16mm			37%
2. Video			14%
3. Filmstrip kits			27%
4. Sound slide sets			22%
USER PREFERENCES	HIGH	MEDIUM	LOW
1. 16mm	69%	21%	10%
2. Video	60%	25%	15%
3. Filmstrip kits	38%	43%	19%
4. Sound slide sets	36%	45%	19%

### *General Conclusions*

1. Phonorecords and audiocassettes are popular items and should remain in media collections. It is important to keep in mind that these items are essential not only because they support a music curriculum, but because they are an integral part of faculty and student life.
2. Reel-to-reel acquisitions should be phased out.
3. Filmstrip collections and 8mm films should remain minimal unless there are specific requests for them.
4. Overhead transparencies need more attention.
5. Slides should be collected. Their broad applicability and frequent use in faculty and student productions make them quite useful.
6. Filmstrip kits and sound slide sets are good investments, but the main acquisitions efforts should be in the area of 16mm and video formats.

### **Arrangement of the Collection**

The question on arrangement of the collection was designed to determine the patterns in physical arrangement and storage of media materials. Of the respondents, academic libraries devote about 10 percent of their square footage to media. This allotment seems to shrink as enrollments increase—a phenomenon that is easily explained. First, if a library is physically large, 10 percent could represent an entire floor or building, while in a smaller library, 10 percent might mean one room. Second, a larger institution is less likely to have a central facility, and might have its media resources scattered throughout the campus.

Shelving preference is clear—77 percent of the responding libraries shelf by media format, 20 percent shelf by call number, and 3 percent interfile their collection. This is an obvious response to the special shelving requirements media materials demand. It is nearly impossible to shelf collections of size and variety by call number. Each format has its own distinct shape and there is often a difference in size within the format itself. One can only conclude, therefore, that shelving by call number implies a small collection.

Large collections of slides are also the most difficult to control. A picture may be worth a thousand words, but it is also possible to use some pictures in at least a thousand ways. Because of this extraordinary range of choices—and implicitly, the substantial indexing or cataloging task—libraries have for years been reluctant to develop substantial slide resources. Consequently, the potential impact of slide collections

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is often weakened by compartmentalization—that is, each area jealously protects its holdings at the expense of other areas which might find the slides useful.

Overall, 40 percent of the respondents have separate slide collections while 60 percent do not. The statistics point to a correlation between enrollment and centralization, since smaller academic libraries tend to have separate slide collections. This is probably due to the fact that in larger institutions, departments often control their own slide collections. Nevertheless, it would be wrong to assume that only the departments are at fault. By and large, most libraries are hesitant to take on the responsibility for acquiring and maintaining a general slide collection.

### **Access to the Collection**

The survey question of access seeks to determine if collections have open or closed stacks, and how these configurations affect patrons and staff. Access to media collections can be a troublesome issue in an academic library. In an environment where intellectual vitality is paramount, “browsing” is an important activity for student and scholar alike. Some would even argue that it is an integral part of the process which produces creative thought and insight. Yet scanning a shelf filled with plastic video cases or metal film cans (whose titles often belie their contents) is hardly as rewarding as browsing among print collections.

Furthermore, open collections often produce anxiety among media staff responsible for collection control. Patrons move materials from one place to another making it difficult to run an efficient operation—particularly if the media collections are linked to a classroom delivery service. There is always the fear of theft especially in the video format. This becomes increasingly worrisome as the one-half inch video format, which is compatible with home videocassette recorders, makes its way onto library shelves.

Still, patrons seem to need and want the browsing option and, as the survey shows, the respondents have for the most part satisfied this demand. Although open access to media is generally not useful, it will probably continue for a time—a source of relief to those patrons frustrated by the lack of adequate cataloging. A critical need here is a more sophisticated and thorough approach to both subject heading assignment and annotations. Once that is accomplished open collections will probably become obsolete.

## Circulation

While media materials rarely have restricted circulation within the confines of the library, circulation outside of the controlled library environment poses some major problems. Video and 16mm film formats are expensive, phonorecords are easily harmed, and filmstrips and slides are fragile. Most media are dependent upon specialized equipment which, if not properly maintained, can cause serious damage to the materials. Despite these limitations, 57 percent of the institutions surveyed circulate media outside of the library; even more, 71 percent, allow community groups to borrow media. Based on the survey data, it appears that if a library allows its media to circulate outside of the library, then it permits all of its media to circulate regardless of format. This is rather curious since it would seem logical that the more expensive and fragile items would be governed by restrictive policies.

Evidently, automated circulation systems for media collections have not been a high priority in the academic library, because 91 percent of the collections in the survey are manually operated and only 9 percent attempt automation. This is partly the result of the general bias which has traditionally faced media. When machine conversion projects were begun, monographic collections became the priority. Only recently have retrospective conversion projects for media been implemented. It is interesting to note that the state library directors involved in the New Jersey CL Systems Incorporated (CLSI) automation project recommended that media receive a secondary status for input into the system. Until this bias is overcome and librarians come to regard audiovisual media as important sources of information in their own right, the prospects for the automation of access to media materials remain unclear. The final goal of automation should be to improve access and service, and that goal should include all information resources.

## Collection Development

There is little discussion in the professional literature that deals specifically with collection development as it pertains to the audiovisual field. Yet the data in this survey reveal that 42 percent of the responding institutions have compiled collection development policies. Because few precedents exist in this area, we found this percentage rather surprising. It might be legitimate to assume, therefore, that many of these policies are informal in nature and are characterized by *inexplicit guidelines*.<sup>4</sup>

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Faculty involvement is clearly a prerequisite for any intelligent approach to media collection development since faculty will often discover references to media materials through their own professional journals and contacts. These materials, which sometimes go unnoticed by media reviewing tools, can be ordered for evaluation and possible purchase. The survey results suggest that this practice is a common one—faculty and staff have considerable recommending power, and students also seem to be well represented in the process.

Previewing media materials is another essential part of any media selection process, and previewing should be the rule rather than the exception. The committee approach to selection is used by 75 percent of the libraries surveyed. This approach both helps to justify the cost of the more expensive items and involves the user. As Donald Ely argues in "Technology à la Carte," "educational technology is most successful when those who will ultimately use and benefit from it are involved in the adoption process."<sup>5</sup>

Locating and selecting media materials is not an easy task to accomplish. Not only is there no single comprehensive listing of media materials, but the specific lists and guides which are available are often not arranged by format and rarely by subject. As Richard K. Gardner points out in *Library Collections: Their Origin, Selection, and Development*, there are few "good inclusive guides to films or other visual materials that offer selective lists of recommended works. Most existing guides are merely inclusive listings of all that is available."<sup>6</sup>

Distributors', producers', and publishers' catalogs are by far the most popular reference tools among those who responded to the survey. Library and media periodicals seem to be used about equally and the NICEM indexes come close to having a "standard" status. Film and video catalogs are also regularly consulted and the *Schwann Record and Tape Guide* is the predominant source for musical selection. Some of the most regularly used review sources include *Previews*, *Choice*, *Booklist*, *Media and Methods*, *Video Source Book*, and *Educational Film Locator*.

While all of these are of some value, there are few truly comprehensive sources for review of all media types. This, coupled with the fact that many reviews recommend media items for a college audience which are in fact more appropriate for elementary or secondary schools, makes the selection of media materials a cumbersome process.

No discussion of collection development can be complete without some mention of budgetary considerations. The figures are telling. Only 9 percent of library budgets are earmarked for media and a staggering 68 percent of the libraries do not have other institutional funds to

supplement their collections. This is a fatal funding formula. If a media center is located within an academic library and has no source of revenue outside of the library budget, it will probably be the first to be cut in a money crunch. A better arrangement would be to establish separate budgets that do not compete with one another and which reflect the distinctive nature of the materials themselves.

## Staffing

Working within an academic library can be awkward and irritating for media personnel. If they happen to be library trained, they may be viewed suspiciously by the media staff. Conversely, if they are media trained, they sometimes are viewed disdainfully by the library staff. Staffing then is a question of delicate balance between the media center and its academic library parent.

The average media center in the survey is staffed with 12 percent professional employees, 22 percent support staff, and 66 percent student workers. Dependence on staff support and student aid is common in academic libraries, but major problems can arise when media personnel are recruited from among library trained employees.

In the library complex, media personnel interact with patrons in many unique ways. Since subject access often does not match user requirements, patrons depend on the media staff's recommendations. The staff, then, should be familiar with the contents of the materials in order to provide reference services. In addition to this knowledge, media personnel need to have some mechanical aptitude because they work constantly with media equipment. Thus if media are to play an active role in the curriculum, the attendant staff must be willing to combine content knowledge and mechanical skills—a blend different from other areas of the library.

In the professional ranks, 42 percent of media center personnel have library titles and 58 percent have media titles. The survey shows that the most desirable credential is an MLS with media training, but when it comes to the actual hiring, the media specialist is preferred. Perhaps as media become more acceptable in the academic library, a combination of library and media training will become the standard educational requirement for media personnel.

Among many things, personality stereotyping accounts for some of these staffing problems. It is generally agreed that print and nonprint folk don't mix. The bias against the superficiality of nonprint is as real as the bias against the "dull" book world. Librarians as a group are

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viewed as introspective while media people are perceived as temperamental and a little out of control.

Although there may be an element of truth hidden within each of these stereotypes, the prejudices which result must be overcome if libraries are to meet the future demands of society. Librarians should be willing to accept media as an information source on a par with monographs, and media people should recognize the crucial role of librarianship in dealing with the information explosion.

### **Bibliographic Control**

Bibliographic control of media simply means providing specific access points to materials in order to answer a user's inquiry. Because of media's special characteristics, bibliographic control has been largely overlooked until recently.

The fact that 61 percent of the media collections in the survey are cataloged by technical services staff and 36 percent are cataloged by media staff is revealing. On the one hand, it implies some acceptance on the part of the library community for media materials as an information source since cataloging, whether print or nonprint, is done centrally. However, it may also indicate that media personnel are skeptical of traditional cataloging practices as they are applied to media materials. There is some justification for this view. First, most media people feel that they are probably better qualified to catalog media because they have first-hand experience both with the content of the materials and the client's needs. Second, media materials require more original cataloging—a situation which makes familiarity with the materials themselves crucial. Finally, some technical services staff are uncomfortable cataloging media, and media are often relegated to a low-priority status.

The question dealing with descriptive cataloging (see appendix, sect. VIII, no. 2) might have been better designed, because the options are not mutually exclusive. For instance, "computer-based" cataloging can be both AACR and in-house. Nonetheless, connections between the technical services staff and AACR descriptive cataloging, and between media staff and in-house systems, are apparent. Technical services staff are usually trained to employ standardized practices for bibliographic description. Media staff for the most part are not trained catalogers, though they probably have a better sense than catalogers of access points for media. The unfortunate result of this situation, however, is that media continues to be cataloged by different standards—a condition which leaves everyone confused.



Another interesting correlation can be found between classification and access. Of the libraries responding, 55 percent use either LC or Dewey, and over 50 percent of the collections provide open access. This is not a coincidence. It is well established that classification enhances browsing by allowing for a more sophisticated storage and retrieval system.

OCLC is a vital cataloging tool for the general academic library because it provides the library with a central database. It is especially useful for the media cataloger since it promotes consistency and standardization. Another advantage of OCLC is its emphasis on keeping cataloging practices current. For instance, OCLC was the first to implement the Machine Readable Data File in October 1984.<sup>7</sup> It is consequently not surprising that 70 percent of the responding institutions use OCLC.

Subject indexing is very important to the user and exceedingly challenging for the media cataloger. Traditional cataloging techniques tend toward the specific, but the needs of media's clientele tend to be general. This paradox is not easily solved. How does the cataloger identify the contents of a film in a precise manner and satisfy the user's need for generalization at the same time? It is impractical to expect every film dealing with psychology to be listed under that heading. It is equally unsatisfactory to list a film on Freud under his name but not under psychology. When cataloging comes to terms with media's broad applicability, access will be greatly improved and media materials will be available to a more diverse educational audience.

As far as access points are concerned, the need for title and subject access is obvious. With media, these descriptors are more likely to be used than author access. It is rare for a patron to ask to see a list of all of the films made, for example, by Perry Miller Adado, or all of the videos produced by McGraw-Hill. The user may, however, need to see titles and annotations for each part of Kenneth Clark's "Civilisation" series.

### **Other Media**

Thus far this study has concentrated on media collections themselves. But if a collection is to achieve a status beyond that of a materials repository, there should be some relationship to other types of media services.

In recent years, academic libraries have become increasingly interested in integrating media centers, especially as microcomputers and their accompanying software become a high priority. The survey data illustrate this trend. In fact, we were surprised to discover that support media services are not as insignificant as expected.

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When a library commits itself to a general collection of media software it is also stating that the collection is to be used by the general patron. Therefore, it needs to make available and maintain viewing facilities. If it were otherwise, individual departments would keep their media materials for classroom use, and there would be no need for either a previewing facility or a carrel area.

Delivery services—which require considerable support staff and a certain level of technical expertise—can be costly operations. In the survey, 68 percent of the libraries have equipment delivery services and 50 percent have equipment repair services. Still, it is safe to assume that if there are technicians on the staff to help run the equipment the staff is also involved with repair.

The relatively high percentage (60 percent) of production services offered within the academic library was most surprising. We believe this figure may be misleading since the question does not specify the level of service. There is a substantial difference between offering service for video production and providing for slide duplication. It seems safe to infer that libraries generally do not support a full range of production services, but probably maintain some of the more modest ones.

It is understandable that a darkroom is least likely (33 percent) to be located in the academic library. Darkrooms are costly in terms of staff and maintenance and have stringent design requirements governing physical layout. This is an unfortunate situation. Experience at Stockton has shown that if a library does operate a darkroom, it is widely used and appreciated.

Consideration of the relationship of media materials to playback equipment is essential (see appendix, sect. X), for it is this interdependence which characterizes the media center. Most media are machine-dependent. To strike a balance between materials and equipment is one of the hardest tasks facing administrators. As Richard E. Moore points out in an article *Audiovisual Instruction*: "Nonbook media folk have been more concerned with rapidly changing hardware, its acquisition and maintenance, rather than the application of the equipment to instruction."<sup>8</sup>

Founded during an era when technology was seen as a panacea for educational ills, many libraries with media holdings have emphasized the need to acquire new hardware. However, it is important not to purchase new hardware before educational materials for that hardware are available, because playback equipment is often more advanced than the educational materials available for use on that equipment. Technology, despite its seductive quality, can too often lead to the tacit assumption that media equipment is more important than media materials.

American society is obsessed with gadgetry, and educational technology is no exception to that predilection.

## Conclusion

It is important to remember that percentages can be misleading. Even though the data identify the contents of an average media center among the responding academic libraries, in reality no such typical configuration exists. Thus these averages are descriptive, not normative. They are meant to provide a reference point for planning and should not be viewed as either a standard or a recommendation. Still the data presented here have an intrinsic interest and they suggest some general conclusions.

This survey indicates that 80 percent of the respondents perceive the demand for media as increasing. An incongruity here is that only 28 percent of the respondents were at the time seeking grants to maintain their media services. Yet when a library chooses to include media materials among its holdings, it should also recognize that media are not peripheral to a library's financial planning. If media materials are perceived as equal to but different from printed materials, appropriate funding formulas need to be devised to guarantee the continued strength of the media center. Additional funding sources—that is, sources outside of the regular library budget—must be sought. Should this not be done as a matter of course, competition between print and nonprint for library funds will eventually render the media center ineffective.

The survey data also indicate that media collections are tied closely to the way an institution's curriculum evolves. A school of music, quite naturally, might have a preponderance of records and perhaps few, if any, slides. Nevertheless, while curricular demands help shape the character of each media collection, it is important to compare the frequencies with which each format appears in the average collection. Format preference, like subject emphasis, remains a major factor in determining the character of a media collection. According to the survey, respondents' preferences from most to least preferred were as follows:

1. audiocassettes
2. phonorecords
3. film strips
4. 16mm films
5. single slides

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6. videocassettes
7. filmstrip kits
8. audiotape reel-to-reels
9. 8mm films
10. overhead transparencies
11. sound/slide sets

Other interesting bits of information were gleaned from the survey data, among them:

- phonorecords are present in most collections surveyed and are particularly prevalent in older schools. This might be explained by the affordability and familiarity of sound technology;
- among the responding libraries, there is a trend that 16mm film collections increase with enrollment. Aside from the obvious fact that larger institutions have larger resources, 16mm film collections have become traditional in many libraries;
- among the libraries surveyed, institutions founded between 1851 and 1900 generally have the best collections—that is, collections which include well-rounded representations in all formats;
- among the responding libraries, slide collections that are separated from other software collections contain an average of 12,000 single slides;
- among schools responding to the survey, those founded between 1901 and 1940 have the most square footage devoted to media and the largest percentage of open collections;
- among academic libraries returning the survey, larger schools are less likely to have browsable collections. Security and preservation considerations probably explain this situation;
- among the responding libraries, larger and newer schools tend to automate and schools that automate generally impose fine policies;
- among the libraries surveyed, the relationship between staffing and collections reveals a definite trend toward specialization according to function. For the most part, librarians are in charge of collection development while media personnel handle circulation;
- among those responding, schools in New England have an especially active approach to writing grants compared to other regions of the country.

Although, taken as a whole, the results of this survey offer few surprises, they do provide confirmation for many hitherto undocumented assumptions about media collections. At the same time, the statistics can be interpreted in two quite different ways—either as a

justification for removing media entirely from the academic library, or as evidence that media should form an integral part of a library's holdings.

I feel that the incorporation of media within an academic library is the best alternative. Few would today reject the notion that media can become an effective part of the teaching and learning process. Indeed, if academic libraries function best when they form a natural extension of the classroom, media can just as naturally lay claim to a place in the library. But media's legitimacy extends beyond routine classroom applications. Perhaps its early history as a teaching aid used almost exclusively in elementary and secondary schools has made us less appreciative of its potential for serious research. Happily, that attitude is beginning to change as colleges and universities give closer attention to the value of media materials as scholarly resources. In the end, both scholars and librarians have much to gain by encouraging this development.

### ACKNOWLEDGMENT

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I also would like to thank my colleague Raymond A. Frankle, former Director of the Library at Stockton State College and presently Director of the J. Murrey Atkins Library at the University of North Carolina at Charlotte, for having the vision to include media as part of Stockton's academic library and for encouraging my work on this survey.

### References

1. For a different statistical approach to the subject of media in higher education, the reader should consult the DEMM Task Force Report. See Albright, Michael J., chair. "The Status of Media Centers in Higher Education: DEMM Task Force Report." *Media Management Journal* 1(Spring 1984):4-18.
2. Initially, the percentage of each format was calculated separately. As we progressed, we realized that the statistics were skewed, because the 16mm film and video formats represented less than 1 percent of the total collection. This is clearly a problem since it is commonplace for libraries to collect more of those items which are considerably less costly. Thus a straightforward numerical comparison is inappropriate. To correct

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this bias, the data were grouped into three categories: (1) strictly audio formats, (2) strictly visual formats, and (3) audiovisual formats. User preferences were analyzed according to (H) high, (M) medium, and (L) low ratings.

3. As A.L. Wright has noted: "slide programs in the hands of skilled teachers are not only useful in themselves, but also stimulate creative impulses in others." See Wright, A.L. "A Slide Library That Grew Gloriously Out of Hand." *Audio-Visual Instruction* 24(Oct. 1979):31.

4. Richard Gardner concludes: "When all is said and done, the fact remains that many libraries, particularly large ones, have never adopted a collection development policy." See Gardner, Richard K. *Library Collections: Their Origin, Selection and Development*. New York: McGraw-Hill, 1981, p. 229.

5. Ely, Donald P. "Technology á la Carte." *Instructional Innovator* 25(Jan. 1980):19.

6. Gardner, *Library Collections*, p. 167.

7. Richard Green, OCLC Section Manager for Online Data Quality Control, to Phyllis Ahlsted, personal communication, 16 Sept. 1985.

8. Moore, Richard E. "Library Management of Media Center." *Audio-Visual Instruction* 24(Feb. 1979):48.

# APPENDIX

- I. Which of the following formats do you hold in your media materials Collection and what is the number of holdings in each format?

Avg. No.	%		Avg. No.	%	
329	3%	Audiotape, reel to reel	269	3%	Filmstrip kits with audiocassette or phonorecord
924	8%	Audiotape, cassette	334	3%	Overhead transparencies
89	1%	8mm filmloops	5275	48%	Slides
398	4%	16mm films	226	2%	Sound/slide programs
135	1%	Videotapes	2565	23%	Phonorecords
475	4%	Filmstrips			

- II. Please indicate user preference of the formats:

High	Medium	Low	
5%	14%	81%	Audiotape, reel to reel
59%	30%	11%	Audiotape, cassette
6%	25%	69%	8mm filmloops
69%	21%	10%	16mm films
60%	25%	15%	Videotapes
19%	41%	40%	Filmstrips
38%	43%	19%	Filmstrip kits with audiocassette or phonorecord
23%	31%	46%	Overhead transparencies
31%	41%	28%	Slides
36%	45%	19%	Sound/slide programs
53%	29%	19%	Phonorecords

- III. Arrangement of collection:

- What percentage of library square footage is devoted to media? 10%
- Are your media materials
  - 20% shelved by call numbers (all formats together)?
  - 77% shelved by format, then call number?
  - 3% interfiled with book collection?
- Is your slide collection, if you have one, in a separate area? 40% Yes 60% No

- IV. Access to Collection:

For the purpose of these few questions, "open collection" shall be defined as a collection that may be browsed, and "closed" as one in which browsing is restricted.

Is your collection (based on the previous statement)	Open to:	Closed to:
	51% Students	49% Students
	65% Faculty	35% Faculty
	65% Staff	35% Staff

- V. Circulation:

1. On the following list, please check the formats which circulate outside of the library or off campus:

55%	Audiotape, reel to reel	49%	Overhead transparencies
65%	Audiotape, cassette	58%	Slides
50%	8mm filmloops	54%	Sound/slide programs
55%	16mm films	61%	Phonorecords
51%	Videotapes		
65%	Filmstrips		
64%	Filmstrip kits w/audiocassette or phonorecord		

- Are your materials ever made available to community groups? 71% Yes 29% No
- Which of the following describes your media materials circulation system? 91% Manual 9% Automated

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4. Do you have fines for overdue materials? 54% Yes 46% No  
 5. Do you bill for lost or damaged materials? 85% Yes 15% No

VI. Collection Development:

1. Does your library have a written collection development policy for media materials? 42% Yes 58% No  
 2. Which staff member is in charge of media collection development? 56% Library 44% Media  
 3. Do you have a preview/review committee for media materials? 75% Yes 25% No  
 4. Please check applicable: 96% Faculty 64% Students 79% Staff  
     are able to recommend media materials purchases.  
 5. Which reference tools do you regularly use in selecting media materials? Please list:  
     Distributor's, Publisher's, Producer's Catalogs, Library & Media Catalogs, Schwann Record & Tape Guide,  
     NICEM Indexes, Previews, Choice, Booklist, Media and Methods, Video Source Book,  
     Educational Film Locator  
 6. Percentage of library budget devoted to media services 9%  
 7. Do you have other institutional funds, aside from library budget, available for media material purchases?  
     32% Yes 68% No

VII. Staffing:

1. Please fill in the number of staff in your media area:  
     12% Professionals 22% Support 66% Student Workers  
 2. What is the title(s) of the professional staff? 42% Library 58% Media

VIII. Bibliographic Control:

1. Who catalogs your materials?  
     61% Technical services staff 36% Media services staff 3% Outside vendor  
 2. Is your collection descriptively cataloged?  
     17% AACR I 42% AACR II 23% In-house generated 18% Computer-based  
 3. Is your collection classified? 37% LC 18% Dewey 27% Accession number 18% Unique number  
 4. Do you utilize OCLC in cataloging your media materials? 70% Yes 30% No  
 5. Can your media materials be accessed by: (check all applicable)  
     82% Author? 90% Subject? 92% Title? 64% Series? 73% Shelf list?

IX. Please check those services you offer, in addition to providing media materials:

- 60% In-house production of audio, video, visual, graphic materials  
 33% Darkroom facilities  
 82% Previewing facilities  
 68% Audiovisual equipment delivery  
 50% Audiovisual equipment maintenance and repair  
 80% Carrel area

X. Media Equipment:

1. Do you have a circulating pool of equipment? 71% Yes 29% No  
 2. If yes:  
     Does the library deliver and pick up this equipment? 63% Yes 37% No  
     Does the user pick up and return the equipment? 89% Yes 11% No  
 3. Who is eligible to use circulating pool? Please check:  
     68% Faculty 61% Staff 52% Student 14% Other  
 4. Is there any charge for use of this equipment? 11% Yes 89% No

XI. Conclusion:

- Do you perceive the demand for media materials: 80% Increasing? 1% Decreasing? 19% Steady state?  
 If you perceive an increasing or steady state, are you involved in any grant proposal preparation to supplement  
 your existing library budget? 28% Yes 72% No  
 If yes, could you specify the grant source? 48% Federal 22% State 7% School 23% Other



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# Financing the Academic Media Center: Past Trends and Current Prospects

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JOHN W. RAIMO

IN THE MOST RECENT *Library Trends* issues devoted to the role of educational media (October 1967 and April 1971), little attention was given to the question of financial support for media facilities.<sup>1</sup> In a way, this illustrates the optimism that then characterized academic planning. Both issues appeared during higher education's halcyon days (at least budgetarily!) when adequate funding seemed less a problem than the need to accommodate the growing number of students seeking admission to the nation's colleges and universities.

Clearly, much has changed. Funding for higher education in general and for media centers in particular can no longer rely on the lavish federal programs that flourished during the 1960s and early 1970s. In response, institutional advancement now has become a serious business on most of America's campuses, as fund-raisers rush to identify and cultivate prospects that might have been overlooked just a decade ago.

But declining opportunities for media center funding may have been exacerbated over the past decade or so by another trend in higher education. The 1960s represented an especially fertile era of curricular reform, an era in which instructional use of nonprint materials became part of a general reaction against the traditional classroom lecture. Marshall McLuhan appeared remarkably observant during these years when he declared that, "the classroom is now in a vital struggle for survival with the... 'outside' world created by new informational

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media."<sup>2</sup> Internal and external funding for media, consequently, seemed to many institutions to be an indispensable part of any creative approach to a new, more stimulating curriculum.<sup>3</sup> Since the 1960s, however, the worth of some of these educational innovations has often come into question. Might there perhaps be a connection between a growing preference for "practical," career-oriented courses and the tendency of some colleges and universities to cut back on support for their media facilities?

Yet a third factor complicating the media center's quest for funding ironically, has been the preoccupation of many administrators with what is currently higher education's most pervasive technological resource—the computer. While, in the past, nonprint collections and playback equipment often competed directly for funding only with the academic library's need to purchase printed materials, the burgeoning movement to promote library automation now frequently diverts funds that a decade ago might have gone to media facilities.<sup>4</sup>

This essay cannot, of course, offer a comprehensive solution to the problem of funding college and university media centers.<sup>5</sup> It will, however, outline the general categories of available support, and assess the current prospects of attracting funds for instructional technology in higher education. In the process, it will also explore some of the implications that a media center poses for a library's internal budget policy.

### **Federal and State Support**

In a 1972 analysis of instructional technology's previous growth and future possibilities, the Carnegie Commission on Higher Education concluded that further development was largely dependent on support from the federal government. Indeed, the commission's report recommended that Washington should "provide a major share of expenditures required for research and development in instructional technology and for introduction of new technologies more extensively into higher education at least until the end of the century."<sup>6</sup> The report even proposed the periodic establishment of regional cooperative learning-technology centers, with federal funds defraying one-third of the operating expense and all of the capital needs of these centers. In all, the commission called on the federal government to allocate \$100 million to promote instructional technology in 1973, with support increasing by 1980 to a level equal to 1 percent of America's total expenditures on higher education.<sup>7</sup>

Given federal policy during the years between 1956 and 1972, the Carnegie Commission's ambitious hopes for the future were by no

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means utopian. Although federal support for academic libraries had been minimal before 1956, the creation that year of the Council on Library Resources marked a new era in library funding. The council's mandate to "aid in the solution of problems of...academic and research libraries in particular" resulted in major grants for pilot projects dealing with the emerging audiovisual instructional technologies.<sup>8</sup> By the mid-1960s, federal involvement with the newer media was becoming even more extensive. The Higher Education Act of 1965 authorized academic libraries to purchase nonprint materials and equipment, while the Office of Education gave further impetus to instructional media by sponsoring Stanford University's ERIC Clearinghouse, which provided information on audiovisual teaching techniques. The Office of Education also funded the Educational Products Information Exchange (EPIE), a central agency that worked to "evaluate, codify, and disseminate reliable information about instructional media and instrumentation."<sup>9</sup>

Soon after the publication of the Carnegie Commission's blueprint for media's future, federal funding policy began to change dramatically. Title II of the Higher Education Act (PL 89-329) is the category of federal support traditionally most significant for academic libraries and media centers and, as table 1 illustrates, there was a precipitous drop in funding for all categories of library activity, except for research libraries, between fiscal 1979 and fiscal 1984. Grants under Title II-A (College Library Resources), which specifies that funds may be used to acquire "magnetic tapes, phonograph records, [and] audiovisual materials,"<sup>10</sup> declined steadily during this period. By fiscal 1984, Title II-A was receiving no appropriation at all. Title II-B (Library Research and Demonstration), a category meant to foster "the improvement of information technology," similarly suffered a sharp decrease of 75.8 percent between fiscal 1979 and fiscal 1984.<sup>11</sup> The federal government's projections of support for fiscal 1985 and 1986 are even more distressing to those concerned with the need to promote media center growth, leading to the conclusion that, at least for now, grants under Title II will be in short supply.

While the Reagan administration's position on federal domestic support has reduced or imperiled other possible sources of public funding, both the National Endowment for the Arts (NEA) and the National Endowment for the Humanities (NEH) do offer a few opportunities to obtain grants that have at least some positive implications for media in academic libraries. For example, NEA currently funds a program that gives assistance to "educational and similar institutions for film and

TABLE 1  
HEA TITLE II FUNDING FY79-FY84

	<i>II-A (Col- lege Library Resources)</i>	<i>II-B (Training)</i>	<i>II-B (Research and Demonstra- tion)</i>	<i>II-C (Research Libraries)</i>
<i>FY79</i>	\$9,903,000	\$1,054,550	\$991,000	\$6,000,000
<i>FY80</i>	\$4,988,000	\$667,000	\$333,000	\$5,992,268
<i>FY81</i>	\$2,977,400	\$667,000	\$235,826	\$6,000,000
<i>FY82</i>	\$1,915,200	\$639,050	\$240,000	\$5,760,000
<i>FY83</i>	\$1,905,490	\$640,000	\$240,000	\$6,000,000
<i>FY84</i>	\$ 0	\$638,800	\$240,000	\$6,000,000
Percent change FY79-FY84	-100%	-39.4%	-75.8%	0%

Sources: *Catalog of Federal Domestic Assistance*. Washington, D.C.: USGPO, 1980-84; *Library Career Training Program: FY84 Fellowships*. Washington, D.C.: U.S. Department of Education, 1984; *Library Career Training Program: Fellowships/Traineeships for Training in Library and Information Science* (fact sheet). Washington, D.C.: U.S. Department of Education, 1985; and *Strengthening Research Library Resources Program: FY84 Abstracts*. Washington, D.C.: U.S. Department of Education, 1984.

video exhibition programs, short-term residencies, workshops and seminars."<sup>12</sup> Still, the long-term benefits for an institution's media center are likely to be incidental to NEA's main purpose here, which is to "assist individuals and groups to produce films, radio and video of high aesthetic quality."<sup>13</sup> NEH funding can also provide some ancillary support. All libraries serving adults are eligible for special project funds that encourage "understanding of the humanities resources in libraries by thematic programs, exhibits, media, publications, and other library activities."<sup>14</sup> Finally, NEH's challenge grant program can assist academic media centers, assuming the institution's development program can raise three times the amount of the award in nonfederal funds from new or increased contributions.<sup>15</sup>

State agencies are scarcely capable of compensating for this discouraging trend in federal funding of academic media centers, but they do represent a resource that should not be overlooked. The media program of the Ohio Arts Council, for instance, has provided support for university media centers engaged in projects that have community-wide relevance. A few states, such as West Virginia and Massachusetts, have approved legislation that authorizes funding for the establishment of media centers, although such legislation is often subject to the same political pressures which have resulted in the erosion of grants programs at the federal level.<sup>16</sup>

### **Corporate and Foundation Support**

Federal and state agencies are usually reluctant to finance the acquisition of media equipment, and in some cases corporate philanthropy can become an effective alternative. A recent article in the *Chronicle of Higher Education*<sup>17</sup> pointed out that gifts of company products have within the past three years emerged as an important aspect of corporate policy. In fact, such gifts now constitute 10 percent of total corporate giving to higher education in the United States, amounting to over \$100 million annually. Computer equipment composes a significant share of these gifts, as companies seek to entice students with their products before they enter the work force.

While other contributions with media applications, such as audio and video equipment, are not nearly as plentiful, even this category includes some possibilities for support. A relatively new trend that may affect college and university development programs in a major way is the "clearinghouse" concept, in which companies donate equipment to an organization that represents a group of educational institutions. In Illinois, the National Association for the Exchange of Industrial Resources serves as a clearinghouse for 3000 educational institutions interested in the acquisition of equipment, while Davidson College in North Carolina is the base of operations for the Company/College Gifts-in-Kind Clearinghouse, which specializes in new equipment.<sup>18</sup>

As with federal funding, the 1960s and early 1970s represented a time in which private foundations took a special interest in libraries and media centers. An analysis of foundation support from 1960 to 1972, based on grants in the *Foundation Grants Index*, shows that libraries and related activities received over \$202 million, mostly in funds for institutions of higher education. Although federal grants for these purposes amounted to considerably more—approximately \$1.3 billion between 1957 and 1972—it is clear that foundation philanthropy played an important part in the nonprint revolution which affected academic libraries during these years.<sup>19</sup>

This pattern of support has now changed significantly, as many major foundations turn their attention to other areas. Cutbacks in federal aid to community service agencies have forced some foundations to look at more basic societal problems, and support for libraries and media centers is understandably less compelling than the need to alleviate human suffering. Educational programs with computer implications, admittedly, have been rather well funded by the foundation world to date, but computers are the only form of instructional technology to resist the trend toward funding cutbacks. Even the computer's curricu-

lar role has come under closer scrutiny by private foundations, which sometimes have seen little tangible gain result from their involvement with such projects.

A small group of foundations and organizations are mentioned in the *Annual Register of Grant Support* as having media as a primary focus. The Florida Association for Media in Education offers modest scholarships "to assist deserving students enrolled in media programs," as does the Ohio Educational Library Media Association.<sup>20</sup> The National Home Library Foundation in Washington, D.C. provides small grants, usually ranging from \$5,000 to \$25,000, "to encourage new techniques in the operation of libraries of printed and audio-visual materials and to aid in the wider dissemination of information."<sup>21</sup> The Film Fund, based in New York, also makes modest grants for media activities to individuals and tax-exempt organizations, especially to "promote the production and distribution of quality films, videotapes, and slide shows on social issues."<sup>22</sup>

Nevertheless, most private foundations that support academic media do so not because of any special commitment to the instructional use of nonprint materials, but because of a broader interest in a particular college or university and its library operation. In view of this, proposals seeking funding for media are more likely to be successful if the media center forms an integral part of an institution's library facilities. Major foundations will usually be more inclined to provide media support if the request is presented as part of a larger library initiative, and not as funding for a distinct entity with a separate curricular perspective.

### **Fee-Based Services as a Source of Support**

The issue of fee-based services, or the practice of charging customers for the use of media equipment, has both advocates and detractors among library and media center administrators. Earlier commentators on the subject generally opposed the imposition of such charges, believing that it would likely result in a pattern of less frequent use.<sup>23</sup> More recently, the impact of the computer revolution on America's academic libraries has caused analysts to take a closer look at the subject.

Although rental of microcomputer time certainly can produce revenue for a media facility if done correctly, media centers choosing this alternative should also recognize the risks involved. For example, as Ronald Leach has suggested, there is always the potential for conflict between an institution's customary fund-raising activities and the decision to charge an outside constituency for services.<sup>24</sup> From an institu-

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tional standpoint, there is little sense in raising money for a media center through a fee-based policy directed at local businesses, when those businesses might reduce their annual giving accordingly.

The same principle, of course, applies to charging individuals for services. Most development officers would be chagrined to learn that a prospect for a major gift to the academic library or media center was being asked to pay for services that he or she had previously received as a courtesy. Ultimately, the decision whether or not to impose such fees should be made only after close consultation with the college or university's institutional advancement program.

### **Internal Funding: Media and the Academic Library Budget**

Being perceived as part of a college or university's overall library program clearly has major advantages for a media center in its search for external funding and, for that matter, in asserting its curricular legitimacy. Nevertheless, the incorporation of a media center within the library does create special problems from a management point of view, since nonprint items and equipment simply do not fit easily into a budget process appropriate for printed materials. The approach to budgeting is often so different that some institutions have taken the easier, though academically unfortunate, option of removing the media center from the library entirely.

Film-based materials, for instance, typically have a shorter life span than books, and this greater perishability has important implications that must be recognized when a budget is put together. At the same time, while technological advances have had an enormous impact on the instructional value of media equipment over the past few decades, those same advances have had a cost—the accelerating rate at which the equipment becomes obsolete. Long-range planning for media equipment and maintenance, therefore, needs to be especially sensitive to the pace of technological change. Even space considerations are much different for media items and equipment than for book and journal holdings, a factor that affects internal funding decisions when a library facility expands.<sup>25</sup>

All of these issues can seem overwhelming to academic library budget planners, most of whom received their early training when media played only an incidental role in the instructional process. Fortunately, some librarians are now becoming conversant with the distinctive internal funding requirements posed by a media center, a tribute to the traditionally trained librarian's capacity for professional growth and development. This awareness of media's special budgetary needs



must be nurtured through closer communication between media specialists and print librarians if libraries are to remain effective centers of the education enterprise on America's campuses.

## Conclusion

In tracing recent patterns of support, it is apparent that most academic media centers will find the quest for adequate funding to be a major challenge, at least throughout the 1980s. A survey of 196 academic media centers conducted in 1982-83 concluded that "the overall funding picture is rather distressing."<sup>26</sup> In terms of external support, only 29 of the 196 respondents obtained grants that year, with only two awards exceeding \$50,000.<sup>27</sup> Consistent with this is a forecast made by the Book Industry Study Group which several years ago predicted that the acquisition of audiovisual materials by academic libraries would decline from \$15.3 million to \$13.1 million—a decrease of 14.4 percent—between 1976 and 1984.<sup>28</sup> Though the final figures for that period have not yet been compiled, the Book Industry Study Group's estimate does accurately reflect the sluggish market for media materials in the United States. With the exception of the strong impetus for automation, instructional technology in our college and university libraries is now in a phase that can be accurately described as one of arrested growth.

Still, it would be premature to assume that recent reductions in federal funding and the inability of the private sector to compensate for this decline signals the demise of media centers as vital contributors to college teaching and learning. After all, extramural funding was never the primary source of income for academic media centers even when such funding was more plentiful. What is needed, perhaps, is a willingness on the part of college and university library administrators to appreciate media, not merely as an occasionally useful supplement to the educational process, but as an important means of promoting education in a better and more complete way. If that happens, media programs will be perceived as something greater than an expensive frill that comes to mind when budgets have to be reduced.

In turn, media specialists and nonprint librarians may need to adopt a more sophisticated attitude toward their profession. As early as 1968, Paul Saettler was critical of the assumption that the "adoption of...new instructional media" would, in and of itself, be a means of bringing about instructional improvement.<sup>29</sup> Saettler's warning points to a difficulty that plagued many of the ambitious media centers in the 1960s, when some media specialists seemed to conclude that the investment of more money in support of new technology would almost

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automatically pay educational dividends. That assumption, of course, was naïve. The academic media centers that have prospered since then have done so because of the sensitivity of their personnel to the instructional process, and not a blind faith that technological wizardry will inevitably persuade faculty to incorporate media into their teaching. Media specialists, then, would do well to cultivate a close working relationship with their faculty and develop an appreciation for the many disciplines where media has an application. Such a relationship will strengthen the academic media center's chances for budget support far more than will external funds obtained to promote something that faculty perceive as irrelevant to their educational goals.

### ACKNOWLEDGMENT

Lisa Ringey and Lynn Ventura, both of the University of Vermont's Office of Sponsored Programs, contributed to this article by suggesting possibilities for federal support of educational media. I also discussed the subject with Evan Farber, head librarian at Earlham College in Richmond, Indiana, who offered some typically sage advice at the beginning of my research.

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# Collection Development and Nonprint Materials in Academic Libraries

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MITCHELL WHICHARD

## Introduction

COLLECTION DEVELOPMENT FOR nonprint or audiovisual software is not simply a matter of purchasing slides, records, audiocassettes, video, film, or computer software. It is also the selection and evaluation of the appropriate equipment or technologies. It is defining whose role it is to make those selections. Establishing how the audiovisual (AV) collection fits into the overall scheme of an academic library's mission is an important factor, as is planning for the effective long range use of AV software, whether as library tools or as educational supplements.

The purpose of this article is to explore the above principles by presenting some general ideas on how to formulate a collection development policy for audiovisual materials in academic libraries. Several basic questions must first be raised about collecting nonbook materials for academic libraries: Why should academic and research libraries become involved with nonprint materials at all? If they do, should collection policies for audiovisual software be directed only at supplementing faculty classroom needs, or can they be used as a resource for academic research? Should there be separate funds for AV materials, or can existing book funds be stretched to purchase these expensive items? Should all librarians be equipped to select AV materials, or should it be the job of faculty/librarian committees or one "media specialist"?

There are other concerns, including the need for a reasonable amount of planning for storing, cataloging, and circulating materials. However, two other considerations are perhaps the most important for

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academic libraries developing AV collections. The first is the danger of building in obsolescence—of devoting too much of a library's AV funds and technology to too narrow a range of software and machinery. The other involves the temptation to expand into media only to meet transitory user demands for more of everything, thus overlooking the need to plan carefully how a collection grows. Both can contribute to the notion of a library media collection as an arcade.

### **Why Collect Media in Academic Libraries?**

While preparing this article, I discussed with a friend and colleague the possibility of applying for the videotaping rights for a PBS program—"Civilization: Heritage of the Jews"—from the Television Licensing Center (TLC). When we asked one professor whether he could make use of the program in his classes, his response sounded familiar—everything he saw on television was for entertainment. He undoubtedly did not intend his statement to be interpreted as some kind of broad indictment of nonbook materials, but the underlying assumption was that printed sources are a presumably superior medium of information for academics and researchers, and for their students as well. It would be pointless to pursue this line of reasoning any further. If an academic or librarian prefers the printed word to any other source of knowledge, media librarians should not take it upon themselves to challenge such opinions. Their immediate task must be to search for ways to fulfill the curricular needs of the university community in the best and most practical ways possible.

Those faculty whose pedagogic and philosophical perspectives are flexible enough to adapt to sources other than books will embrace many new learning tools. Indeed, they will often suggest themselves that the library investigate a variety of intellectual resources.

Much more important considerations for libraries and their development of media collections are such mundane issues as:

1. Establishing what the media needs of an institution are.
2. Integrating those media needs into the general collection-development policies of the library.
3. Making the existing AV budget stretch as far as possible while at the same time developing new funding resources for media that do not always compete with book dollars.
4. Establishing a priority system for selecting materials, and for rotating the materials requests among the various disciplines.

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5. Developing a clear-cut idea of what general selection practices for the library already exist.
6. Formulating a media software collection-development policy that reflects understanding of the rapidly changing trends in technology and software.
7. Having a collection-development policy that indicates what purpose media should play in an academic library.

This last goal will be the most difficult to achieve. In academic libraries an entrenched feeling for the research and scholarship methods that employ books is still a major barrier for those interested in adding media collections to the library. Nonbook materials have been slow to gain full acceptance from some academics. Nevertheless, every new media format has had to undergo a period of skepticism and confusion about its value before gaining acceptance. Some formats historically referred to as nonprint materials—e.g., maps, realia, and the micro-forms for journals and periodicals—have become more readily accepted. Learning resources that require machines often encounter a built-in resistance at first, and university faculty and researchers can sometimes be more afraid of them than their students. This fear may make it difficult to convince academics that a film or videotape is as valid an intellectual tool as a book or journal.

Building a media collection requires careful planning. The research needs and goals of the Association of Research Libraries (ARL) member schools, for instance, are hardly the same as those for other colleges and universities. Part of any collection-development process must be the evaluation of whether a library's patrons have a real need for media, and what overall profile the library has as a research or teaching institution. Use patterns must be thoughtfully considered for all materials acquired and equipment needs adjusted accordingly. Like books, AV software gets lost, worn, or damaged, while machines break down or wear out. Because of the relative expense of the formats and equipment, one can see how media might become a great "black hole" of wasted dollars, space, and working hours. The planning aspect of collecting AV materials consequently becomes even more vital. Collections should not expand just to meet short-term demands by a constituency as transient as that of a university. A constant guessing-game mentality may be required: What are the maximum benefits for library users if we buy this film or that video? Will buying so much of format x over y mean we paint ourselves into a costly, obsolescent software and technology corner? Is the purpose and mission of the library being needlessly altered for the sake of technological and media materials' "trendiness"? These

questions require that academic librarians look to a number of sources for guidelines and information.

### Library Literature

Library literature on the subject of collection development of audiovisual materials is hard to obtain. Perhaps the most succinct analysis of what constitutes AV collection development can be found in Bonk and Magrill's *Building Library Collections*:

The selection of non-book materials is, of course, based ultimately on the same principles as for the selection of books: one seeks the best materials available in terms of authority, accuracy, effectiveness, or presentation, usefulness to community, etc. A key question is whether or not the medium used is an effective one for presenting the chosen topic. As with books, selection will be affected by the type of library, its size, the community in which it functions, and librarians' conception of the purpose of the institution. The library will try to have selection done by people who are informed about the subject matter presented in the non-book form, and it will employ sources of reviewing for the evaluation of each item, just as it would for a book.<sup>1</sup>

William A. Katz, in *Collection Development: The Selection of Materials for Libraries*, offers an excellent and concise discussion of the process of developing media collections in academic libraries.<sup>2</sup> Though he is not as emphatic as Bonk and Magrill about the absence of real difference in selection media and books, Katz's general arguments match theirs almost exactly. He also does an excellent job of synthesizing the most important evaluative points of selection for AV materials—purpose and scope; difficulty; authority, honesty, and credibility of producer, director, and performer; subject matter; comparison; timeliness; format; price; curriculum support; and demand.<sup>3</sup>

It is difficult to improve upon the soundness and simplicity of Katz's and Bonk and Magrill's humanistic approach to media collection development. The other relevant literature on the specifics of AV selection and acquisition is brief and disappointing. For the most part, it deals with AV collection development too abstractly, from a theoretical perspective rather than a practical, problem-solving one.

Implicit in both Katz's and Bonk and Magrill's assessment of how academic libraries should collect media is the belief that successful AV materials selection is the same as that for printed materials. Since a key issue for academic libraries is whether media selection should concern itself primarily with research or instructional support, the problem of how collections are acquired is singularly important. The most logical

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solution would be to have media reflect the same standards and purpose attached to book selection. Equating AV software to books is essential to assuring that AV software shares the intellectual credibility attached to books, especially at this stage of media's development in academic libraries.

The tangible differences between books and journals and any AV program—film, video, or computer software—are too obvious to discuss here. What is less obvious is their ultimate interchangeability with the printed word as a pedagogic and research tool. A videocassette of Shakespeare's *Macbeth* is as valid an interpretation of the play as a 500-page study printed by a university press. The nuances of performance, speech patterns, expressiveness of performers, and directorial style help create that interpretation. Add to that the fact that several different performances of the same play offer interpretive diversity—the BBC version *v.* Orson Welles's *v.* Kurosawa's *Throne of Blood*—and the relationship to a written analysis is complete.

As with books, the ultimate aim in collecting AV materials is to provide library users with a useful artifact for learning. If media professionals continue to argue that AV software is somehow rarer and more exotic than books, they will force libraries to make either/or choices that would not now prove favorable to media. At the same time it is important to consider that form alone is not the only thing that makes AV materials different from books—cost, physical fragility, and timeliness are involved as well. In a later section of this article, the formats most suitable for an academic library environment will be discussed with respect to the ultimate goal of integrating AV materials into the mainstream of collection-development policy.<sup>4</sup>

### **Audiovisual Equipment**

Recognizing the changes and advances in AV technology and equipment does not require that librarians have great technical skills. It does demand, however, that individuals responsible for media collection development seek to become familiar with the equipment. In fact, the relationship between software format and the playback technology for that format is of supreme importance. One does not exist without the other. Any media collection must maintain a clear balance between materials selected and the most compatible equipment for that material.

The chief AV equipment or "hardware" used in media centers are 16mm film projectors; video players and recorders (one-half inch VHS, three-quarter inch U-matic, Beta, and videodiscs); 35mm slide projec-



tion machines (projectors, caramates); audio player/recorders (record, cassette, reel-to-reel, some digital cartridges); and filmstrips. All of this equipment except video has been used extensively for a number of years and there have been few major changes in these traditional formats. (One exception is reel-to-reel tape, which is far less prevalent than in the 1960s.) The new digital technology has few applications for libraries as long as archival collections of music and spoken-word recordings are not transformed to match the new equipment.

Slide and filmstrip projection have hardly changed. Carousel trays, caramate, and 35mm projectors are still the most prevalent and functional means of viewing a slide program, though rear-screen projectors do make slides accessible for larger audiences and remove the noisy machines from the open.

The greatest area of development in AV technology is in video. This format has great potential as a tool for individual research and study, and as a versatile instrument for storage and retrieval of information resources. Even though video technology is still undergoing rapid change, the machinery is not as forbidding to users as 16mm. The popularity of videotaping in the home has made it a nearly universally used and accepted technology.

Library literature makes much of the potential for video technology, especially the videodisc.<sup>5</sup> In the educational media marketplace, however, there are few programs available for general curricular needs. The most commonly designed packages now available are aimed at medical, technical, and industrial markets. There are packages in the fine arts (such as the National Gallery of Art collection on laser disc) and some feature titles are sold even though the home disc player has been overwhelmed by the cassette player. Nevertheless, the disc is a costly medium from which to reproduce noncommercial software, and low production volume minimizes the amount of materials available. There are few published sources that list videodisc programs; even fewer catalogs, brochures, or fliers are available from producers. The major educational media producers and distributors are not very interested in disc either, and the videotape is the only visual alternative that they have considered marketing with 16mm films.

### **Audiovisual Formats Collected**

Audiovisual formats and academic libraries do not generally mix very comfortably. The nonbook medium must still struggle in a "book" environment. This situation is changing, however, as 16mm film, video, audio recordings, 35mm slides, and filmstrips become standard

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formats collected by libraries. Obviously, software is the next area of development for media collection.

It should be noted before discussing these various formats—each of which presents different problems for libraries—that there is not a “books-in-print” type of reference for librarians to use when selecting AV materials. The *Audio Video Market Place: A Multimedia Guide* (AVMP) is a very useful compendium of producers, distributors, services, and labs, but it does not include titles and prices. For that information, one has to rely on either fliers and published catalogs or the reviews of media mentioned later. Several speakers at a RTSD (Resources and Technical Services Division-ALA) cataloging workshop in October 1984 discussed the desirability of such a “books-in-print” guide for media. The main problem facing the publisher of such a reference volume would include arranging the many vendors and suppliers, as well as treating the sliding scale of prices for different formats. Prices vary radically from vendor to vendor and there is no uniform pricing code for film and video. Film and video rental and lease arrangements help muddle the picture as well.

### **Films**

Film has been the longest-lived of “educational media.” The best, the worst, and the duller of instructional material has been put on 16mm and 8mm film stock. Libraries and media resource centers are often filled with dated, totally unusable films. All the past and present difficulties (real and presumed) in acquiring, maintaining, and especially selecting AV software for libraries can be seen in the history of the educational film.

Instructional and “educational” programs designed primarily for classroom use were first made available on 16mm film. The major source of short (45 minutes and less) programs suited for the average class period is the 16mm film. There are literally thousands of films available in hundreds of subject areas. Titles on 16mm that are suitable for the most advanced levels of study and research may still be limited in many areas—advanced humanities and social sciences films, for instance—but overall they are good AV sources for academic libraries, either as rentals or purchases.

The kinds of films large academic libraries collect are substantially different in content, scope, and purpose than much of the material treated in most media indexes and guides. The traditional sources for reviewing media—*Film Review Index*, *Media Review Digest*, and *Film Review Annual*—are generally more than adequate selection tools, but

the materials they cover are often directed at students less sophisticated than those who attend four-year colleges and research institutions. While reviewing sources such as *Choice* and *Booklist* do offer some help, the best reviewing source for an academic community will be the interested faculty. Because of the relative expense of film titles—the price usually ranges between \$350 and \$2500—only the most well funded library could afford to invest randomly in films. Faculty can judge from experience and previews whether an advertised film can satisfy their instructional needs.

Academic libraries committed to creating 16mm collections must recognize several important facts:

1. Arbitrary selection is not reasonable unless the film budget is extremely generous.
2. When collections are developed and funds are limited, the selection process should include advice from faculty familiar with the specific areas where a film might be most useful.
3. The preview process is essential. The library should determine if it will pay preview costs (if any) or have interested departments assume the cost.

Academic media librarians must seek to acquire film titles useful across disciplines whenever possible. These films should have a reputation as standard resources. Most important, all of the previous criteria must be met at the most reasonable price.

Although there is no one selection tool that can provide all the information one needs for selecting films, a look at the most thorough film references available in the *NICEM Indexes* (National Information Center for Educational Media Indexes, 8th ed. 1984, Access Innovations Inc.) and the *Educational Film Locator* (2d ed. 1980, R.R. Bowker) will help in assessing the many titles available in the educational marketplace. These references also give some clue as to the number of institutional and commercial sources which can answer inquiries on price and availability.

The selection process should be flexible to accommodate the wealth of sources, but not quite as random as with books, given the especially high cost of films. Still, having a strong core collection of film titles is vital. There are films in the humanities, sciences, and social sciences that may be best suited for a particular campus' curricular needs, and the library must discover what those needs are. The library that acquires an existing collection—as occurred at the University of North Carolina at Chapel Hill—has a head start.<sup>6</sup> If the acquired collection was heavily used in the past, there is likely to be a pattern that can be easily

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recognized. The selection process also becomes less of a challenge under the circumstances since presumably there already exists a good line of communication with vendors, distributors, and producers. With the reviewing media for educational materials so heavily directed at school and college levels, sales information of every kind will likewise be very helpful. These same sales fliers and company catalogs—taken in conjunction with the *NICEM Index* and the *Educational Film Locator*—are the chief tools for 16mm film selection.

There are a number of major academic research institutions with large film collections, but they seldom are part of the collection. Indiana University, Penn State University, and the University of California—Berkeley, for example, each have huge film depositories that serve as key sources for film rentals by other institutions, but their services have been established as income-generating businesses and not as research archives for the parent institution. The library collecting films must determine early on if the purpose of having a collection is to provide materials to its local community or to serve as a fee-based resource for other borrowers as well.

### **Video**

The emergence of video technology and its accompanying software—videocassettes and videodiscs—have made and will continue to make the acquisition of film titles by libraries and others more feasible. Videocassettes are widely available commercially, are compact and are usually much less expensive on a per-title basis than 16mm. This format also has the advantage of subject diversity in areas such as feature, documentary, and instructional films, while an abundance of outlets for purchase, both local and national, permits comparison shopping.

The reviewing patterns for video resemble those for books more than any other AV format except audio titles. Because of the huge commercial market for video, sources are as diverse as daily newspapers, film industry trade papers, and popular publications like *Video Review* and *Variety*. *Booklist* and *Choice* are the two best professional sources for academic libraries. There are extensive commercial and institutional catalogs produced by vendors and distributors, but the most complete reference and information guide is probably the *Video Sourcebook* (5th edition, Professional Volume, National Video Clearinghouse, Inc., 1985).

The 1985 *Sourcebook* lists over 35,000 programs and 700 sources from which to rent, purchase, or lease videotaped materials. As with

16mm films, educational programming on video is often well suited for in-class instruction because of the length (45 minutes or less). Since video was initially marketed for home use, it has lagged behind in offering strictly educational titles until recently. The huge home market is part of what makes the overall prices relatively low, though educational video still averages from \$200 to \$300 for VHS titles and \$250 to \$450 for three-quarter inch U-matic titles.

Purchasing video titles through vendors is not the only selection technique available to libraries. Pertinent titles broadcast on commercial and public television can be videotaped by an interested institution through the Television Licensing Center (TLC)—a subdivision of one of the largest 16mm rental sources, Films Incorporated. Licensing fees are currently \$125 per broadcast and are valid for the life of the tape. Large savings are also possible through off-air taping. The WGBH series "Vietnam: A Television History," for example, would have cost \$450 an episode in a prepackaged form.

Relying on off-air recordings, however, does involve some special requirements:

1. Programming schedules need to be consulted constantly to insure that the desired program is recorded. Knowing that a particular item will be rebroadcast is also helpful. The biggest drawback is that interested faculty often want a title after they have seen it, sometimes long after its initial broadcast.
2. Recording assumes that the library has, or has access to, a videotape recorder equipped with tuner/timer for this type of material.
3. Getting video programming requires the expenditure of funds for blank videotapes.
4. Having a television with good reception is vital. The quality of what costs \$125 is only as good as the television reception.

Off-air videotaping considerably expands the selection possibilities. At the same time, it emphasizes the relationship between AV formats and the machines that record, project, or play back the programs acquired. It is not realistic to consider video or any other audiovisual format without determining if the format required is appropriate for an institution's needs. As noted earlier, video will undoubtedly become the predominant technology used in academic institutions. It is the one format that can be recommended without reservation as the cornerstone of a newly-established media collection.

## **Computer Software**

The place of computers in libraries gives rise to a variety of questions for which there are no readily discernible answers. There are few software packages designed expressly for libraries and commercially available products are often too expensive and fraught with potential copyright problems. Review sources for computer software range from professional titles like *Booklist*, *Choice*, and *Library Journal* to the many computer magazines such as *Byte*, *PC World*, and *Computer and Science*. This is still too unsettled an area for coherent library collection development. Besides, it must still be determined whether computer software will become part of the public service and reference areas in academic libraries. Much like microforms, collecting computer software ultimately may not be a concern for media librarians at all.

Until the computer market develops into something approaching uniformity, collecting software for librarians will be only as reliable as reviews and producer "hype" allow. As with video and audio, there is currently no lack of vendors or distributors from which to choose.

Computers are already a permanent part of academic libraries, serving as key components in online bibliographic and cataloging services. Many institutions are now producing online catalogs yet the next areas which computers will influence remains uncertain. For example, the implications of computer software for technical services processes—acquisitions, cataloging, and collection development—are not completely clear. Many existing programs—biblio filing, business, and word processing—can be adapted to meet some aspects of technical services specifications, but these few programs conceivably could have drawbacks (such as slow-filing bibliography programs, or programs with limited text-handling capabilities). There are even some packages for circulation though they are most appropriate for very small collections or for operations such as fines and billing.

The most frequent problems are the limited capacity of computer programs (or the computers) to store and retrieve large quantities of information and the sticky issue of copyright. Even more frustrating is the American computer industry's refusal to make software compatible across the board. For every individual manufacturer of computers there are software packages designed only for that particular brand. In some cases, programs that were compatible with an earlier model cannot be used on subsequent models of the same company's computer; often, too, software development slows or stops for earlier models of a microcomputer.

Perhaps the best approach for libraries to take with computers is to establish banks of machines with multiple copies of software for use

only in the library. Or perhaps libraries merely should make space available and turn over the selection of software and equipment to interested departments and users. Computers and computer software in academic libraries, at least as far as traditional circulation and selection procedures are concerned, could become one of those infamous "black holes" where money and staff time vanish without substantial advantage to the library's overall purpose.

### **Traditional Audiovisual Materials**

Along with 16mm films, the most universally accepted audiovisual formats are audio recordings and photographic slides. There are few libraries (see appendix D) without some spoken-word or music recordings in their collections. As for slides, the availability of so many science, historical, and art packages makes them almost as acceptable in libraries as audio. Fewer collection-development problems exist here, compared with film, video, and computer software; and vendors, catalogs, and review sources are as numerous for these formats as they are for books.<sup>7</sup>

The brevity of the discussion of these formats is not meant to denigrate them, but to suggest that as they are presently used and collected, catalogers and selectors in academic libraries have little difficulty handling them. It is with one of these formats—photographic slides—that some of the earliest experiments with the storing, reproduction, and retrieval capacity of the disc technology are being connected. Although the Library of Congress' Optical Disk Project is a prototype storage and retrieval project, it will be some time before optical disc technology is available in any marketable form for the rest of the library world. Even when it does arrive, it will create more collection and selection problems, particularly involving affordability and the copyright question.

### **Conclusion**

Several conclusions about collection development of audiovisual materials for academic libraries may be drawn. First, professional literature in this area is next to nonexistent, a situation that needs to be rectified if librarians hope to gain a clear perspective of what nonprint media means to the academic world. It is also vital that media professionals and librarians work hard to insure that audiovisual materials achieve an equal intellectual status with printed materials, something that cannot be achieved if librarians keep insisting that the collection,

## *Collection Development and Nonprint Materials*

selection, and acquisition of these resources are absolutely different from what is appropriate for books. At the same time librarians should not fall into the trap of engaging in theoretical discussions on media and libraries, but rather adopt a more pragmatic approach in viewing media's costs, technology, available formats, and selection tools.

Librarians must otherwise understand that media format (software) and technology (machines or "hardware") are interactive. One is useless without the other, and when selecting and acquiring them that fact should be kept in mind. It is also essential to keep abreast of the advances in media technology and to select software based on state-of-the-art technology and market availability of pertinent nonprint programs.

Finally, librarians must recognize that the selection tools for media are diverse, eclectic, and often random. Some of the more traditional reviewing and selection sources were originally designed for school and technical institutions and not the curricular needs of major research universities and libraries. While there are other means of selection, those means are as random and varied as the sources for books. Faculty must certainly have a key role in recommending programs, but the librarian should insure that expensive formats (such as 16mm film and educational video programming) can be used across as many disciplines as possible and not become obsolete shortly after they are purchased.

I began research on this article hoping to use library literature and collection-development statements from a select number of academic libraries to determine recent trends in media collection development. I also consulted the *Undergraduate Libraries Newsletter* (UGLI) to observe the statistical patterns among its member libraries, most of which are also institutions belonging to the Association of Research Libraries.

The collection-development statements turned out to be of negligible use. Indeed, there was rarely any mention of media at all. When statements were included, they were brief, general, and frequently similar to the statement of principles on media issued by the American Library Association in 1976. The statistical data in the *UGLI Newsletter* confirmed this state of affairs in many ways (see appendixes A-D). A number of the ARL institutions had media collections, usually located in the undergraduate library. This choice of location was due, most likely, either to the centrality of the building or the fact that the main focus of the collections was support of undergraduate instruction rather than research. The appendixes to this article illustrate the growth (or lack of growth) of AV collection sizes in a number of *UGLI Newsletter* libraries. While these statistics lead to no definitive conclusions about



media in academic libraries, they do suggest that media seems to have some role to play.

The future of the AV collections in academic libraries is closely related to how well we go about selecting these materials. "The dragon of everything," as one authority has stated, "is not really dead until we have fashioned the lance of selectivity—and used it."<sup>8</sup> We must make rather than find or wish for, clear-cut policies on selecting and collecting academic media resources, and closer attention to that process in the literature would be a good place to start.

*Collection Development and Nonprint Materials*

**Appendix A**

UGLI Newsletter Statistics  
Audiocassettes

	1976	1979	1981	1983
Harvard	N/A	0	29	29
Ohio State	70*	N/A	4487	4446*
Berkeley	N/A	N/A	174	362
UCLA	2834*	N/A	3006	4280
Michigan	299	573	833	N/A
UNC-CH	2041*	640	N/A	1356
Texas	0	202	346	5720
Washington	2497	N/A	7690	-
Maryland	0	8527	7338	N/A
Indiana	870	14433	13371	N/A
Tennessee	0	5500**	-	5744
Stanford	388	389	N/A	7795*

\*These numbers refer to total number of recorded items, regardless of format.

\*\*No distinction was made between tape and cassette. Tape could be reel or cassette.

**Appendix B**

UGLI Newsletter Statistics  
Films (16mm)

	1976	1979	1981	1983
Harvard	-	-	-	-
Ohio State	70	N/A	1253	1327
Berkeley	-	-	-	-
UCLA	-	-	-	-
Michigan	-	-	-	-
UNC-CH	-	N/A	8	481
Texas	-	-	-	-
Washington	192	N/A	227	298
Maryland	-	-	243	N/A
Indiana	-	159	N/A	N/A
Tennessee	-	-	-	-
Stanford	55	70	N/A	74

**Appendix C****UGLI Newsletter Statistics  
Video**

	1976	1979	1981	1983
Harvard	-	-	-	-
Ohio State	70	N/A	747	785
Berkeley	-	-	115	N/A
UCLA	-	-	60	366
Michigan	91	190	235	N/A
UNC-CH	-	-	-	350
Texas	-	4	9	27
Washington	822	-	1660	1861
Maryland	-	2198	1253	-
Indiana	247	442	544	N/A
Tennessee	435	910	-	1171
Stanford	-	2	-	1

**Appendix D****UGLI Newsletter Statistics  
Records (Discs)**

	1976	1979	1981	1983
Harvard	N/A	9274	9350	8770
Ohio State	70*	N/A	N/A	967
Berkeley	N/A	N/A	3384	3379
UCLA	2834*	N/A	3428	2596
Michigan	13516	14641	15264	N/A
UNC-CH	2041*	1651	N/A	2329
Texas	4412	5743	6742	7466
Washington	2842	N/A	3741	N/A
Maryland	N/A	3393	3461	N/A
Indiana	-	-	-	-
Tennessee	-	-	-	-
Stanford	5355	3393	N/A	7795*

\*These numbers refer to total number of recorded items, regardless of format.

## References

1. Bonk, Wallace John, and Magrill, Rose Mary. *Building Library Collections*, 5th ed. Metuchen, N.J.: Scarecrow, 1979, p. 125.
2. Katz, William A. *Collection Development: The Selection of Materials for Libraries*. New York: Holt, Rinehart and Winston, 1980, p. 226.
3. Ibid., p. 231.
4. *Integrated* here is meant to suggest that audiovisual materials should be perceived as educational and research sources on a par with books and journals. The idea of physically integrating AV materials into the book collection seems naïve, and could result in a shelving and circulation nightmare. More important is the way such a policy might infringe on copyright laws. Economically, the idea is impractical. As much as we want AV materials to become a fully accepted and legitimate academic library resource, we cannot do so by recommending practices that would contribute to wasting resources. To pursue these kinds of "integrated" systems would be a move toward making the software collection side of AV materials as expensive a "black hole" as the hardware side.
5. There are few videodisc software catalogs, brochures, or fliers available to audiovisual librarians and collection developers. No listings of software packages useful for general academic purposes are readily available. The optical disc is still in an early stage of development and interested institutions will have to bear the expense of conducting disc projects themselves. Nevertheless, since the optical disc format is being touted as the most appropriate technology for information retrieval, why is there not more news of developing software packages and disc technology systems?
6. The University of North Carolina is used only as an example. The Nonprint Materials Collection was formed in a joint effort by the Media and Instructional Support Center and the UNC library. The Nonprint Materials Collection serves the entire academic and health affairs community.
7. There have been *National Information Center for Educational Media Indexes* for audiotapes, filmstrips, records, 8mm film, and 35mm slides, although new additions for many of these are lacking. NICEM also provides an index to microform material, on microfiche of course. *Choice*, *Booklist*, and *Library Journal* provide reviews for these media. The most prevalent selection literature are catalogs and brochures from producers such as Caedmon; National Public Radio, Educational Media, Inc.; Audio Forum; Chambers Records; and dozens of others.
8. *The Libraries of Stanford University Collection Development Policy Statement*. 1980. Stanford, Calif.: Collection Development Office, Stanford University Libraries, 1981, p. iii.

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# Current Developments in Audiovisual Cataloging

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PAUL GRAHAM

## Introduction

THE PURPOSE OF CATALOGING is to provide access to library materials. Indeed, cataloging serves no function other than to identify items for those who seek information. Since cataloging codes and practices continue to develop, this process suggests that there is not yet a consensus as to what constitutes the perfect cataloging record. It also suggests, however, that professionals in the field are working to improve methods of accessing information and that cataloging is a dynamic function of the information process. Information remains dormant unless channels are established which provide a means of making it usable. Cataloging becomes the key which unlocks and organizes the realm of information.

The search for an adequate cataloging record has been particularly evident in recent years with respect to the development of audiovisual (AV) cataloging, resulting in significant advances in cataloging theory and practice. The development of the *Anglo-American Cataloging Rules*, 2d ed. (AACR2) has been of primary significance in providing a uniform treatment of description. Other recent trends have included the revision of the MARC Films Format, and currently the project to provide cataloging-in-publication (CIP) for microcomputer software. This paper will discuss some of these advances and will argue that the rules and practices which have evolved are an outgrowth of the needs of the community the profession seeks to serve.

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## Background

In 1949 the Library of Congress published *Rules for Descriptive Cataloging in the Library of Congress*<sup>1</sup> and later issued supplements to cover items such as motion pictures and filmstrips (1965)<sup>2</sup>; phonorecords (1964)<sup>3</sup>; and pictures, designs, and other two-dimensional representations (1959).<sup>4</sup> Manuals of standards and procedures also have appeared during the last thirty years. While various historical treatments of nonbook cataloging make it unnecessary to treat that subject here, it is worth noting that from Eunice Keen's *Manual for Use in the Cataloging and Classification of Audiovisual Materials for a High School Library* (1949)<sup>5</sup> through AACR2, there have been many improvements in audiovisual cataloging.

## AACR2 and Audiovisual Materials

The most significant feature of AACR2 with regard to audiovisual materials is its attempt to standardize areas of description. It is well known that the rules for description are patterned after the framework of the General International Standard Bibliographic Description (ISBD[G]). Chapter one of AACR2 is devoted to a general explanation of the areas of description while the remaining chapters in part I are devoted to specific types of material. The authors of AACR2 treat print and nonprint on an equal basis, assuming that nonprint should not be dependent on books as the standard for description. Yet the implementation of this idea has not been totally successful.

AACR2 in part views the book as a basis for forming the standard areas of description, although it acknowledges that audiovisual materials have unique qualities which need to be considered. In applying descriptive principles, it unfortunately becomes necessary at times to work from a monographic point of view in order to achieve some uniformity of description.

The title and statement of responsibility area perhaps causes the least confusion, although there is still some. Consider for example the general material designation (GMD). No GMD is used for books. While AACR2 provides the GMD "text" for use by North American agencies, the Library of Congress, as explained in the *Cataloging Service Bulletin*, chooses not to use this GMD, but does employ GMDs which apply to other materials.<sup>6</sup>

It seems that this practice would bias users when they seek information. At present there is still disagreement at the international level over what terms are appropriate for the GMD. This could and should be worked out. It only represents a difference in vocabulary and a

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compromise would profit not only users who must contend with the differences, but also would promote the concept of shared cataloging.

The publication and distribution area also causes some confusion. The word *published* is essentially a book trade word, and it is not, strictly speaking, accurate to apply this term to audiovisual materials such as sound recordings and films. In general, it is customary to think of a disc or tape recording not as being published, but rather as being cut or recorded and then released. The point is even more relevant for films, especially with the proliferation of videocassettes and the companies that make them. There is a vast difference between the production company—i.e., the company responsible for making the film—and the company which manufactures the video product (VHS, Beta, U-matic, etc.). What is most important is the releasing agent of the material type one has in hand along with the distributing agent. This information is obscured by naming the area publication and distribution since they are clearly print-related terms.

The note area is particularly significant for audiovisual cataloging, more so than for printed materials. Printed materials can usually be browsed, unlike AV materials. Even with open access shelving, browsing among AV materials is difficult simply because of their nature. Unlike monographic cataloging, where access only can suffice, the cataloger must present a clear and complete content description of what media contain.

AACR2 provides for this by allowing for the summary note, as well as other notes, but the summary and contents notes are probably the most helpful means of giving users a clear idea of the scope of a particular item. Rule 7.B17 states: "Give an objective summary of the content of an item unless another part of the description provides enough information." Yet, important as the summary note is, there are few guidelines for writing a clear and precise note for AV materials and the term *summary* itself is noticeably missing from the glossary of AACR2.

The *Cataloging Service Bulletin* addresses this issue to some extent. Although it is not written from a media point of view, a description of what a summary note should include might be:

1. The purpose of the summary is to provide an objective and succinct statement of the content of the material (cf. AACR2 7.7B17).
2. In making a concise statement mention only major points. Phrases rather than sentences may be used when clarity and good taste permit.
3. Avoid explicit or implicit evaluation of the contents from any point of view. If it is the contents of the work that show a bias, which it is important for the subject to bring out, word the note carefully so that it is clear that the author's bias is the one being related.<sup>7</sup>



Further refinements of the principles to follow in writing a summary note are needed. For example, what kind of language should be used? If the piece is about a colloquial or folk topic, should summaries be patterned or structured with that kind of vocabulary? To what extent should publishers' summaries be quoted—with or without quotation marks? Some have contended that they cannot use a summary note because certain words are slang. To what extent should the tone of the summary reflect the tone of the material? Should some summaries be evaluative or critical? Guidelines in writing summary notes would help to improve them and benefit users seeking to assess material.

Access points also have been affected by the development of AACR2. The great compromise of the last decade may be the label given to the decision to retain the main entry concept. While main entry remains part of AACR2, it is much less important than in previous codes.

At one time the main entry concept may have helped to provide a mechanism for standardization among bibliographic records within manual catalogs. The automated catalog, however, makes the main entry controversy a moot issue. Access points are the chief area of concern. As long as users find what they need, they are little affected by the form of entry the cataloger chooses to employ.

Films present a unique set of problems when it comes to providing added entry access. As practice now stipulates, added entries are made only for people who have an overall responsibility for the production of the work. Added entries for actors in a film or other personnel in a creative role are made at the discretion of the cataloging agency. A more consistent policy of making added entries for significant participants would be of greater service to the shared cataloging concept than is the present practice. Participants in a film are like performers on a sound recording and all should be traced.

Clearly, AACR2 has been an important development in the bibliographic control of AV materials, but it is not a final step nor was it written with that purpose in mind. The preceding comments are meant to highlight certain topics which need closer scrutiny in order to achieve an improved bibliographic record.

### **Subject Access to Media**

The question of what constitutes adequate subject access for AV materials is a topic little discussed in library literature. Subject cataloging is complicated by the fact that it most often must be done through sources external to the AV material itself such as publishers'

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catalogs, data sheets, and other kinds of information. The Library of Congress presently assigns subject headings to films based on summary notes and sometimes in conjunction with the Dewey number when more information is needed than just the summary note.

Are there any guidelines on how to apply subject headings to media? Are the same principles as those applied to monographic subjects valid for media? Should there be a limitation on the number of subject headings used? One project which has focused on enriched subject access is *Analysis of Subject Heading Lists Applied to Nonprint Materials* by Susan A. Nesbitt.<sup>8</sup>

General monographic subject heading application procedure requires placing the most specific heading(s) on an item. This practice stems largely from principles formulated by Charles A. Cutter in *Rules for a Dictionary Catalog*:

Enter a work under its subject heading not under the heading of a class which includes that subject. Ex. Put Lady Cust's book on "The cat" under *Cat*, not under *Zoology* or *Mammals*, or *Domestic animals*....<sup>9</sup>

This principle was later reaffirmed by David Judson Haykin, former Chief of the Library of Congress Subject Cataloging Division. Bohdan S. Wynar summarizes Haykin's principle of specificity as: "The heading should be as specific as the topic it is intended to cover."<sup>10</sup>

When this rule of specificity is applied to many AV materials and especially to films, much of the content does not receive adequate subject access points. This is due both to the nature of AV materials and the ways people plan to use them.

AV materials generally have a broad-based interdisciplinary applicability and require users of these types of materials to search by broad subjects such as philosophy, science, literature, and war as well as by specific subject. Providing references does help although they do not seem to be adequate in meeting users' needs. Particular studies should be done to focus on the relationship between subjects and users' requests and the way the media item will be used. When enough data are available, specific conclusions regarding subject heading application may be drawn. Subject access is viewed to be of great importance when compared to other access points, and continued study in this area would be a valuable service.

## Visual Materials Format

The MARC *Films Format* recently has been changed to accommodate two-dimensional materials, and renamed the *Visual*

*Materials Format*. The changes in this format will affect such opaque materials as those in chapter 8 of AACR2 and in *Graphic Materials: Rules for Describing Original and Historical Collections* compiled by Elisabeth W. Betz.<sup>11</sup> Examples of materials which are particularly affected by the revisions to the format include prints, posters, drawings, paintings, photoprints, photonegatives, transparencies, and other graphic types.

The change is a current example of how cataloging practices have evolved to meet the needs of the community. Until now there has been no officially sanctioned way of inputting two-dimensional graphics in the databases of the bibliographic utilities because these materials could not be properly tagged in a machine-readable form. While some cataloging agencies did in fact input two-dimensional materials, OCLC has consistently asked that this not be done until proper procedures are established:

OCLC has repeatedly asked that users not input records for two dimensional items until there is a place to put them, that is, until the proposed changes to the A-V format to accommodate these materials have been approved and have been implemented by OCLC....<sup>12</sup>

Now that the *Visual Materials Format* does provide an adequate method for tagging these types of graphics, utilities such as OCLC and RLIN will soon permit them to be entered into their systems.

Changes in cataloging generally come slowly. The Machine Readable Bibliographic Information (MARBI) Committee gave final approval to the changes in the MARC *Films Format* during the American Library Association's midwinter meeting in 1983, although some catalogers had been seeking changes to the format since it appeared in 1976.

However, the most intensive revision efforts began with proposal number 82-21, entitled *Additions/Changes to the Film Format So As to Accommodate Two-Dimensional Material*. This document was first sent to MARBI for preliminary discussion in October 1982 and received its final review by the Library of Congress on 15 August 1984.

The period between proposal and approval was approximately twenty months. In its final form the revised document reflects the ideas of many groups representing the library community at large. As such, the document should meet cataloging needs with respect to two-dimensional materials.

Of great significance was the change in name from the *Films Format* to the *Visual Materials Format*. The change was recommended as early as February of 1983 for the obvious reason that it would more

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accurately reflect the scope of the format. In its new version it will include two-dimensional graphics and perhaps be expanded to cover three-dimensional materials as well.<sup>13</sup> It is interesting to consider some of the specific changes in the format in order to appreciate the significance of the changes.

MARC formats require that the "type" of record be identified. These "types" of records are identified by alphabetic symbols which represent such kinds of records as language material, manuscripts, sound recordings (music and spoken), and maps. Currently, the code designations in the *Films Format* are "g" which stands for principal audiovisual material, "n" which stands for special instructional material, and "o" which stands for kits. Under the *Visual Materials Format*, "g" was changed to "projected media" (a change of name); "k" was designated for "pictures, designs and other two-dimensional non-projectable graphic representations"; and "r" will represent three-dimensional artifacts and realia. The designation "n" has been made obsolete and "o" remains unchanged.<sup>14</sup>

Of particular significance is the difference between projected and two-dimensional materials. Projected media (code "g") includes every kind of visual which needs a screen in order to be viewed, whether it be a CRT or an overhead screen. Examples of projected media include motion pictures, videorecordings, filmstrips, slides, and transparencies.

Two-dimensional materials (code "k") include such items as activity cards, charts, collages, pictures, postcards, posters, prints, spirit masters, transparency masters, and technical drawings. Three-dimensional artifacts and realia (code "r") include such materials as models, dioramas, games, sculptures, toys, and microscope specimens.<sup>15</sup>

In conformity with the changes which occurred under "type of record," the "Physical Description Fixed Field" (007) has many additions/changes as well. This field is used to describe the broad category of material, and while similar to the GMDs of AACR2, the list was not specifically patterned after them. The name for the field itself has been changed from "General Material Designation" to "Category of Material." The category of material code is used as a point of reference from which to assign the "Specific Material Designation" (SMD) and subsequently list the physical description characteristics. Note here the interrelatedness of the value "k" under "Type of Material Code," where it is equated to pictures, designs, and other two-dimensional representations, and "k" under "Category of Material," where it refers to "graphic, non-projected."

When the category of material is "k," there are twelve special designators defined for that area and a definition is provided for each of

the terms. For example, a photoprint is defined as:

a positive image made either directly or indirectly on a sensitized surface by the action of light or other radiant energy. The term "photoprint" (rather than "photograph") is used here as a more precise term than "photograph," which technically can cover both the print and the negative. Radiographs and opaque stereographs are included here.<sup>16</sup>

A picture is defined as:

a two-dimensional visual representation accessible to the naked eye and generally on an opaque backing. This term is used when a more specific designation is unknown or not desired.<sup>17</sup>

Other terms receiving values in "k" and a definition statement include collage, drawing, painting, photomechanical reproduction, photonegative, photoprint, chart, picture, print, flash card, technical drawing, and other graphic types.

Since "k" had become a new code, this necessitated establishing elements to expand further descriptions of physical characteristics. For example, color in 007/byte 03 has as newly defined meanings code "a," one color; code "c," multicolored (the name of the code was modified); and code "h," hand-colored. Codes already existing in the field were made applicable to the new graphic materials.

Field 007/byte 5 represents secondary support material (nonprojectable graphics), and includes eighteen separate categories. A secondary support graphic is "the material (other than normal museum matting) to which the primary support is attached; mounting."<sup>18</sup> Examples of the secondary support materials include canvas, bristol board, cardboard, glass, synthetics, and skins (e.g., leather, parchment, vellum).

In the type of material code (to be distinguished from the type of record code) 008/33 has new codes for "a," art original; "i," picture; "k," graphic; and "l," technical drawing. The information for this field is obtained from the medium designation following the title.

On 29 July 1983, the Library of Congress USMARC Review Group met to consider decisions made by the MARBI Committee. Discussions ensued regarding the use of field 655 (General/Form Headings) and field 755 (Physical Characteristics Access). The decision reached was that the fields should not be combined since they contain different types of information. Field 655 is for an intellectual category and field 755 is for physical characteristics not formalized in the description.<sup>19</sup>

There also were discussions over whether to combine fields 581 and 585. The group eventually recommended not combining them on the

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grounds that here too there existed a major interpretive difference. Field 581 is used to cite intellectual usage and 585 consists of an exhibition note that identifies where material has been displayed.<sup>20</sup> Other fields were also discussed—such as 508, 520, and 555—regarding how to structure the indicators. The 520 note is the summary note with three possible indicator values determining display constants: blank for “summary,” “zero” for “subject,” and “8” for no display constant.

The 555 field is the “Cumulative Index/Finding Aids Note.” Indicator one is the “display constant controller.” The 581 field is the “Publication Note.” Here the display constant indicators are blank for “Publications” and “8” for no display constant.

The display constants did cause concern on the part of the utilities because it would involve restructuring their records. The Library of Congress considered their comments and managed to arrive at a workable solution.

Finally, on 9 January 1984, “the MARBI Committee approved the proposal with the proviso that field 009 not be deleted at this time.”<sup>21</sup> Here agreement was reached between MARBI and the Library of Congress that the field would remain intact until accommodations were established in the 007 field to meet the needs of the archival community.

In April 1984, the Library of Congress reviewed and approved the specifications of the proposal. They will be published as *MARC Formats for Bibliographic Data*, Update number 10, 1983.

Through examining the *Visual Materials Format*, one can see that establishment of principles for cataloging—and in this case, cataloging audiovisual materials—is truly collective in nature. The major networks had significant input into the outcome. The Library of Congress, with its own expertise, drew on recommendations from the utilities plus the significant input from MARBI.

Most important, these committee members and networker employees represent the general library community. The needs of users should be assessed at the grass-roots level and communicated through channels so that changes can be made which will reflect those needs. Ultimately the worth of a cataloging document is measured by the degree to which it satisfies that requirement. If an item fails to communicate information to a user which is meaningful, the reason for providing that element is itself questionable.

The significance of the changes in the *Films Format* is obvious in this case. Prior to this time there was no authorized way to catalog two-dimensional graphics using a MARC format. Institutions with collections of this nature were at a loss to provide standardized access. The implementation of the *Visual Materials Format* will remedy this situation.

### Audiovisual Cataloging-in-Publication

The most recent development in audiovisual cataloging is the Cataloging in Publication project which in early 1985 was in the information-gathering stage. It is interesting to reflect on how and why such a project evolved. In response to the belief of most librarians that the AV-CIP project is important, the American Library Association, on the advice of the Library of Congress, established an interdivisional ALA committee consisting of representatives from the American Association of School Librarians (AASL), the Association of College and Research Libraries (ACRL), the Library Information and Technology Association (LITA), and the Public Library Association (PLA). The committee's goals were:

1. to demonstrate strong interest and a unified demand on the part of librarians that the Library of Congress make AV-CIP a priority;
2. to facilitate the Library of Congress' planning for AV-CIP by answering certain questions;
3. to explore and advocate adequate funding for AV-CIP.<sup>22</sup>

The interdivisional committee met in January 1985 at the ALA midwinter meeting where it was decided that AV-CIP would be limited to microcomputer software. This decision was reached as a result of polling representatives from the various sections who felt that there was less expertise in software cataloging and that cataloging them would fill the greatest need. The deadline set for implementing the pilot project is January 1986. Until then, individual representatives will be consulting their constituencies regarding the needs of the general community.

This process reflects the heart of the evolving cataloging structure. The community expressed its need, administrative organizations responded, and now the community is being asked to provide specifics. The most significant question concerns the kinds of material each agency is acquiring—i.e., what is the agency's collection development policy and from whom does it purchase materials?

Manufacturers of software will undoubtedly be interested in how a library uses their product before they commit themselves to participation in the program. The Library of Congress is also asking other important questions such as what bibliographic elements should be included and where on the item should the CIP data be placed.<sup>23</sup>

AV-CIP is not something that is new to the library world. The National Library of Medicine has had an AV-CIP program since 1977. There have been a total of 304 titles cataloged with CIP and thirty-three different publishing organizations have participated in the program.<sup>24</sup> AV-CIP is a major step forward in the bibliographic control of AV

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materials. It will both help to reduce cataloging costs and emphasize to producers the importance of providing standardized information on their material to improve access and to promote the material's use.

## Conclusions

Audiovisual cataloging continues to be a dynamic function of the information process in that it seeks to discover the methods of search inquiry, to analyze them, and then to structure systematic descriptive and access principles in cataloging them. This dynamic function has been illustrated by considering the contributions of AACR2, the revisions of the *Films Format* and the inception of the AV-CIP program for microcomputer software.

Clearly, audiovisual cataloging, like cataloging of other materials, continues to develop with the aim of offering better access to users. Audiovisual cataloging practices do not derive from a rigid structural definition but rather constitute an expression of stylistics to meet needs. It is more difficult than monographic cataloging only because of the nature of the medium and because of the way that material is controlled in the commercial market. Nevertheless, the philosophical principles involved in cataloging AV materials are the same as those for books.

In view of this, general monographic catalogers should not be reluctant to catalog AV materials. The practice of cataloging all forms, regardless of medium, would help break down the barrier that many library personnel still confront. The cataloger's function is to make all information available, and only when that responsibility is accepted without qualification or prejudice is the profession well served.

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# Media Networking in Academic Institutions

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BEVERLY TEACH

## Introduction

BEFORE COMPUTERS, LIBRARY NETWORKING was more commonly identified as library cooperation, and it traditionally provided avenues for sharing information and resources on a formal or informal basis to solve library problems.<sup>1</sup> Technological advances in telecommunications and computers have brought the term *networking* almost to buzzword status, often connoting computerization, and blurring the distinction between computer networks and information networks. In fact, the merging of computer and information networks has facilitated the access to and sharing of information and resources.

In addition to providing low-cost, powerful computers and high-speed, reliable data transmission lines, the technological revolution has helped to bring media (notably video) to the forefront. Home videocassette recorders, ease of use, and perceived limited maintenance problems have heightened the requests of school teachers, university faculty, and students to use media as an educational tool as well as for entertainment. This interest in media, coupled with the advances in networking, leads to the question of how academic libraries/audiovisual centers can share media resources.

It should be realized that, unlike printed materials, nonprint media are less than a century old. And it was not until 1952 that the Library of Congress published cataloging rules for motion pictures and filmstrips.<sup>2</sup> The growth of media collections dates back to the early

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1900s, but it was during World War II that the 16mm film gained stature as an educational tool.<sup>3</sup> Begun in schools of education, continuing education, or extension divisions under the auspices of such departments as "bureau of visual aids," "audiovisual education," and "audiovisual center," a common priority of these media collections was to provide access to audiovisual materials to faculty and students for use in instruction.

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Aware of the progress that had been made in the standardization and sharing of information on printed materials, those involved in media acquisition and circulation recognized the need to share information on nonprint materials. A chronological history of the development for networking of audiovisual media can be found in the *Problems in Bibliographic Access...*, Final Report of the National Commission on Libraries and Information Sciences' (NCLIS) Project Media Base.<sup>4</sup>

Three key areas for resource sharing of nonprint materials—either through an information network or an electronic network—are (1) bibliographic access, (2) interlibrary loan, and (3) collection development. They will be discussed from the perspective of current and proposed media networking activities within a national consortium of film and video libraries and its members.

### *The Consortium of University Film Centers*

The Consortium of University Film Centers (CUFC) is a national organization (which also includes a Canadian member, the University of Toronto) of sixty-one university film/video libraries. Any institution of higher education which maintains and operates a film center whose express purpose is the extensive dissemination of films to a broad institutional or extrainstitutional audience is eligible for membership.<sup>5</sup> (Film is meant to encompass the moving image in any of its recorded forms or formats—film, videotape, videodisc, and/or recordings or delivery systems using other electronic technologies.)

Conceived as threefold in purpose: (1) problem-solving, (2) information-sharing, and (3) fellowship of a group with common interests, CUFC was founded in 1971 on the premise that film rental libraries shared highly specialized problems, and these common problems and perspectives would benefit from a separate association which could better identify and deal with needs of film rental libraries. The superstructure was kept as small as possible, with the heart of the organization being a number of working committees that, outside of structured meetings of the group, would work on agreed-upon projects.<sup>6</sup>

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Although dealing with the same issues, the profile of CUFC institutional members varies significantly. Institutional statistics for 1983-84 indicate that the smallest collection had under 1000 unique titles and prints (total number of copies) while the largest had over 14,000 titles and 30,000 prints. The average number of prints per title was 1.44. The average number of bookings (circulations) per print was 1.99, with .72 the low and 4.82 the high. Geographic areas served vary from intramural use only to national distribution. The average number of copies each institution had printed of its latest major catalog was 9,922 with 1,000 the lowest and 31,000 the highest; the average cost per copy was \$2.94.

As with collection size, full-time staff varied from one to forty-five. The level of formal training in media selection and cataloging varies as well, with personnel who have the MLS or an equivalent media degree coexisting with competent personnel trained in the established procedures of a given library. Administratively, institutional members variously report to such service units as learning resources, continuing education, or the university library. Twenty-three percent received no budget subsidy from their parent organization; 9 percent were subsidized 100 percent. Forty-seven percent received no subsidy for new film/video acquisitions; 14 percent were subsidized 100 percent. Whether subsidized or not, 52 percent provided materials at no charge for instructional use within their own institutions. Institutions use a combination of traditional methods to deliver materials off-campus, with the U.S. Postal Service being used 61 percent of the time, private carriers (predominantly United Parcel Service) being used 35 percent of the time, and other delivery methods being used only 4 percent of the time.

### **Bibliographic Access**

No matter how big or small the collection, or the size of the geographic area being served, a catalog of holdings is essential for each film center. Film centers that distribute materials outside of their institutions have users who are scattered across the country in every conceivable environment. With this in mind, one of the first committees established by CUFC was the Data Bank Committee.

The goal of this committee was the development of a union catalog of member holdings whose primary purpose was the facilitation of film catalogs for members, and secondarily, to provide other services which might be required, such as a union list of titles entered into the database. Technology at that point was neither cheap enough nor sophisticated enough to consider an online service. Printed catalogs, although time-

consuming and resource-draining, had been successful and were perceived to remain successful.

The committee's job was no small undertaking. Their biggest task was to get agreement among this similar yet diverse membership on the need for bibliographic control and, therefore, standards.<sup>7</sup> Unlike the library community, where bibliographic control is appreciated as essential to effective access, the primary emphasis within these centers was the effective use of the materials themselves.<sup>8</sup> The fact that materials circulated precluded that they were identified and described; each institution had developed their own rules for descriptive and exploitative control; needless to say, none were the same.

The Data Bank Committee also wanted to supplement rather than duplicate other available reference materials; to include as many data elements and as detailed an annotation as possible—since films cannot be “browsed” the way print materials can; to provide subject access and subject tracings so that the user might find other related materials easily; and, what would make the database unique, to include location codes for each institution which held the title.<sup>9</sup>

Eight long years after the formation of the Data Bank Committee, the *Educational Film Locator* was published by R.R. Bowker.<sup>10</sup> The second edition was published in 1980,<sup>11</sup> and a third edition will be available in the spring of 1986.<sup>12</sup>

### *The CUFC Database and Resource Sharing*

How successful has the joint CUFC/Bowker database been in terms of resource sharing? A 1982 analysis by Don Beckwith on the effects of the *Locator* upon bibliographic control, resource availability, user access, and resource duplication concluded that CUFC has effected a vastly improved and simplified selection/retrieval process for the film user.<sup>13</sup> A 1984 survey sent by CUFC to a stratified random sample of past *Locator* buyers indicated that 80 percent of the respondents found the *Locator* to be an invaluable reference tool.

But how successful has the database been to improve resource sharing within CUFC? Nine CUFC members have used the database to generate printed catalogs and several others have expressed interest. Although all contracts included the capability by Bowker to generate catalogs for both members and nonmembers, Bowker was not prepared to devote the time and resources necessary to generate catalogs on demand. In fairness, Bowker is not a commercial firm specializing in catalog production—they are a publisher with multiple interests. Even so, CUFC institutions that realized the benefits of resource sharing

should not be penalized by not being able to effectively use the shared database.

Because of these problems and an overall uncertainty about the continued support of the project within the membership, a survey of the membership was made prior to negotiating a contract for a third edition. A survey of fifty-three of the sixty-one member institutions indicated that only 34 percent of the members responding saw the database as a catalog/tape production and reference tool, while 66 percent saw it as a reference tool only. Support for continuation of the project was overwhelming. As pointed out by Beckwith, before the *Educational Film Locator*, users would have had to have on hand 89 percent of the educational film library catalogs to be assured of a complete film search.<sup>14</sup> With improved and simplified user access, most members had experienced an increase in their circulation statistics. New CUFC members wanted to be included and institutions that faced economic setbacks were willing to provide staff support to update their material. The project that had begun with such mixed support had evolved into a major commitment by every member.

To understand the strong commitment of CUFC members to the project, it must be realized that, to this day, although the CUFC/Bowker database is computerized, it is *not* online. It remains a serial file. This means that *all* updating of records and entering of new data must be batch processed. The amount of paper handled is tremendous. For most members, it means that they do double work; they input for their own databases and input for Bowker.

There was much discussion on the updating methodology for the third edition. As is the case for all shared databases, not only must standards be established for cataloging the material, but guidelines must also be established for submitting the data. Beginning with the third edition, CUFC would be responsible for providing holding code corrections and new data to Bowker in machine-readable form.

#### *Standards for Data, Title, and Holdings Information*

It was always assumed that the Data Bank Committee (which in 1980 became the Editorial Board) should guide all of the professional decisions involved with this publication. After two publications it was obvious that these assumptions carried no weight and that the membership must understand their responsibilities regarding the updating of holdings and inputting of new data. Toward that end, the CUFC Board of Directors established directives which required that: (1) members who were included in previous editions must, at a minimum, update the

status of their holdings already on file; (2) members must meet the minimum standards established for cataloging new data; (3) members must submit the new data in the format required by the Editorial Board; (4) submitted data not meeting either of the preceding specifications would be returned to the originator; and (5) members must meet all timelines established for each phase of the updating process. Prior to participation in the revision of the third edition, each member was required to sign a statement which delineated these conditions.

In addition to the previously stated conditions, the following policies had been set. In the interest of resource availability, members who restrict their circulation to intramural or statewide use only are not to be included in the printed version of the *Educational Film Locator*. Similarly, institutions are not to enter their holdings of titles for which circulation has been restricted in some manner outside of their established policies. Titles which are restricted uniformly by all members are included, and the global restriction is noted. These policies are necessary because at present, restriction information is associated with the title and not with each institution's holding information. As such, it is not possible to identify the different ways an institution might choose to restrict a given title. There have been discussions on including restriction information as part of each institution's holdings information. This would allow random title restrictions to be included in the database but excluded from the *Educational Film Locator*.

For the most part, members have met the stated conditions. All members who were included in the second edition except one (and that member restricts its circulation to within its own state) have updated their holdings in the database. Six new members have entered their holdings. New data forms received number 17,515. Preliminary figures indicate that the degree of overlap is only about 25 percent, with 13,240 unique titles being added to the database for inclusion in the third edition.

What can be done to eliminate the redundancy and increase resource sharing? One of the first priorities is to convert the database from a serial file to an online database. Bowker has begun work on the conversion, and it is anticipated that final corrections for the third edition will be made online.

Depending on the sophistication of the online system—particularly its capacity for remote access—much of the paperwork currently associated with updating holding code information and adding holdings to titles already in the file should be eliminated. This implies, of course, that each institution will be willing to bear the cost of compatible terminals, communications protocols, and line charges for

data transmission, and that they will have received training on the search and update modes of the online system. The more complex issue will be entering new data.

One of the major conclusions reached by Project Media Base was that "the lack of agreement on common conventions and the resultant disparity among database structures are major barriers to the development of a nationwide network for audiovisual resources."<sup>15</sup> The diverse nature of CUFC members has led, either by design or by local conditions, to the development of disparate systems. Over time, many members have automated such key functions as catalog production or circulation, while others have developed fully integrated systems. Those who have not yet automated are exploring the possibilities. Institutions that have online systems offer varying degrees of access, from minimal searching limited to internal staff to full searching on a campuswide basis. Several institutions are actively planning increased access to their collections on a campus, state, or national basis, including the integration of print and nonprint databases to create a unified electronic catalog.

No matter whether new data are submitted on paper, online, or in machine-readable form, the identification and merging of duplicate entries is very difficult, given the nature of bibliographic control for nonprint media. Anyone who has worked with nonprint materials can verify the difficulty in determining the exact title of a film or video. Variances for a single title can appear on the work itself, on the container, on descriptive literature accompanying the work, and in the distributor's catalog. Even if one takes the title directly as it appears on the work, there can be discrepancies, especially when a work is part of a series or one of several titles from the same distributor, all of which begin with the same phrase. Is the phrase a series or part of the title? To do a thorough check for duplicates, each title submitted as new data should be checked against the last printed version of the *Locator* and the data which have been added since. This process allows the editor access to several possible cross references—subtitle, earlier or variant titles, translated titles, other language versions, and series headings—which are critical in helping to identify duplicate entries.

One of the purposes of the original Data Bank Committee was the establishment of a unique number to identify film titles. Publication of the *Educational Film Locator* saw the first assignment of ISBNs for nonprint media. Today ISBNs are assigned by a few large producers, but the bulk have been assigned at the time of generating final pages for publication of the *Locator*. ISBNs are assigned by format, not title. The number of formats a nonprint title can take is limited only by the



technology of the day. To simplify user access and to eliminate file redundancy, there should be only one record for a given title with all available formats included as discrete, searchable fields. The lack of timeliness in the assignment of ISBNs and the fact that they are assigned by format diminishes the possibility of the ISBN being the unique title identifier. Library of Congress card numbers are also assigned by format and not title. A unique number to identify nonprint titles is still necessary.

The disparities have been overcome so far in the *Educational Film Locator* due to the serial nature of the database. Because of the work involved in identifying and merging duplicate entries, it has not been feasible for members to provide new data in machine-readable form. It has been possible, however, for several institutions to generate most of the information required for new data input from their data files.

The diversity in size of collections, coupled with the philosophical differences in approach to subject access and the diversity of file structures, has led to enormous differences in authority files for subject, series, and producer/distributor and the manner in which these data are encoded. In order for members to supply data in machine-readable form, they must convert their coding to that required by the CUFC/Bowker database. This issue is a bigger problem than developing a mutually acceptable machine-readable format.

A hallmark of CUFC institutional members has been their independence and their ingenuity in developing methodologies to build, maintain, and control their collections. However, the price for independence in a shared resource is double work. The necessity to rekey data that are already in machine-readable form must be eliminated.

Another issue to be examined by CUFC and Bowker is access to the online database. The quantity and quality of information included in the database make it a valuable resource for the generation of printed catalogs and for querying as a commercially available information resource.

### **Interlibrary Loan**

Once material of interest has been identified, the next step is to try to obtain a copy of the item for use. There is a basic distinction between the interlibrary loan of nonprint and print materials, aside from the fact that, because films and videocassettes are expensive, there is usually a fee of some sort associated with their use. Films and videocassettes acquired by audiovisual/media centers, more often than not, are instructional in nature. Materials are acquired with a view to how effectively they

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present concepts which cannot be taught without some visual aid or which enhance, supplement, or complement instruction.

As such, unlike the interlibrary loan of print materials—which are generally requested by and for the use of a specific individual—nonprint materials are requested for use on a specific date or dates for use with a group. A slight leeway may be possible, but the use of audiovisual materials in an educational environment usually falls within a fixed unit of instruction. Faculty will place their requests anywhere from one day (or less) to several months in advance. Because the film or videocassette is an integral part of their unit of instruction, faculty will want immediate confirmation that the title will or will not be available. To be able to accommodate this, a film/video library which circulates its materials must have a scheduling system which can maintain a calendar of future bookings.

In addition to knowing the date for which a title is requested, the system must also take into consideration the amount of time needed for the title to go to and from its destination. Transit times will vary not only from destination to destination but for the same destination, depending on the method of delivery chosen. A hold or wait list will not work.

It is also important to be able to readily identify what formats of a title are available. Since 16mm is the standard, there is no problem in the projection of 16mm films. Any 16mm projector can be used. However, because there is no standardization within video formats, video projection is equipment-dependent. Not only must one distinguish between three-quarter inch and one-half inch, but among the VHS and Beta formats as well. Determining whether the format available is compatible with the user's equipment is critical and sometimes difficult. Many users are not aware of the array of formats and therefore are not always able to accurately identify what equipment they have.

Because of the disparities in circulation policies, loan periods, rental rates, and transit times, CUFC has not yet developed a systematic plan for the interlibrary loan of materials among its members. Obviously, however, member institutions rent materials from each other, placing their requests either by telephone or mail. As noted earlier, publication of the *Educational Film Locator* made a significant contribution to the identification of materials and loan sources. Should the CUFC/Bowker database become an online resource, an electronic mail system could be established to request material from the library(ies) identified as having them.

Similarly, individual institutions are exploring the possibilities of enhancing the online search routines they have or are developing by allowing the user to check availability and then either put a hold on the material for later confirmation by the library or send an electronic mail message. Several members have added their holdings to the bibliographic utilities, such as OCLC and the Washington Library Network (WLN), and are able to receive interlibrary loan requests resulting from queries of these systems. Three among the CUFC institutions are acquiring the same integrated software package; the possibilities for networking are under consideration.

### **Collection Development**

Collection development is another area for resource sharing. Areas for cooperation include selection and evaluation of materials and cooperative purchasing. Recognizing that the selection and evaluation of nonprint materials present problems "prompted by the lack of a central mediagraphic tool for locating current media materials and the relative inadequacy of existing reviewing sources,"<sup>16</sup> the sharing of evaluation data has been a prime concern within CUFC.

#### *Sharing Evaluations of Media*

Working through the Selection and Evaluation Committee, the first evaluation-sharing proposal called for institutions to contribute evaluations in a subject area for which they were well known. For example, Penn State University would contribute evaluations on psychology films and the University of California—Berkeley would contribute evaluations on anthropology films. Several institutions participated in sharing on this basis, but the time involved in compiling the evaluations and duplicating costs were always a factor. In the fall of 1981, the CUFC Board of Directors and the Selection and Evaluation Committee agreed to reactivate evaluation sharing within CUFC member institutions, with funds being allocated to cover clerical, duplicating, and mailing costs. Each institution would submit evaluations to a central clearinghouse for distribution to the membership on a semiannual basis. The project was given the name Evaluation Sharing Project, or ESP.

In the fall of 1983, the CUFC Board of Directors charged the Selection and Evaluation Committee with reevaluating the project and formalizing operational guidelines. The guidelines are as follows. ESP is for the principle purpose of sharing evaluations of titles currently being considered for purchase by CUFC members. Titles are selected for

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evaluation by individual film centers, each according to its own needs and purposes, without any formally structured intent to include or exclude any given type of production or production company. However, striving for currency, titles submitted to ESP should have been released within the last three years. ESP is primarily an internal publication, but it is available upon request by subscription.

### *Cooperative Purchasing*

Although not practiced by CUFC on an organizational basis, cooperative purchasing on either an inter- or intrainstitutional basis is another advantage of networking. Cash discounts and product bonuses have been a tradition in the acquisition of nonprint materials (primarily 16mm film, and now video). Generally speaking, the greater the dollar volume of each purchase order, the greater the discount or bonus which can be negotiated.

Cooperative purchases do not have to be the result of formally established buying consortia. Audiovisual/media libraries, academic departments, or other interested groups on a single campus or multiple campuses can agree to contribute toward the acquisition of relevant materials.

A critical issue in any cooperative purchasing arrangement, however, is that the needs of the groups participating be similar. The range of materials vendors offer in given subject areas and audience levels varies widely. Planning and negotiating are extremely important both within the cooperating group as well as with the vendor. The film/video library, with its established vendor contacts, should be responsible for coordinating joint acquisitions.

Several options exist for group acquisitions, including group agreement on materials to be acquired from each vendor with the cost shared by all, or a commitment by each group member to the dollar amount each will spend with a given vendor. The latter method offers greater flexibility and control of local collection development.

The availability of licenses for video duplication and off-air taping have broadened the possibilities and lowered the costs for cooperative buying. They have also forced the audiovisual/media center to be cognizant of the copyright law<sup>17</sup> and the fair-use guidelines.<sup>18</sup> Video duplication is not legal without a license from the copyright holder. The stipulations on how programs taped off-air may be used are explicit; such programs may not be retained and used for an indeterminate amount of time without a license from the copyright holder.

Costs associated with video duplication and off-air taping will depend on (1) whether the copies made will be used on an intramural

basis or if they will circulate outside of the institution, and (2) whether the copies will be shown only by direct projection (video playback units) or whether they will be transmitted over closed circuit, Instructional Television Fixed Service (ITFS), cable, or open broadcast systems.

Although interinstitutional cooperation requires a lot of effort and few final solutions are ever found, the importance of cooperation in terms of growth and development, solving problems, and (if possible) sharing resources cannot be overstated. Technology, financial structures, and educational priorities continue to change and to cause shifts in purchasing emphasis.

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# Integrated Media Operations in an Academic Library: A Profile

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JUDITH A. SESSIONS

## Background

NOT SO LONG AGO, audiovisual (AV) services, television production and support, and library services on college campuses were separated (some might say blissfully separated). The library, basically a repository of books, served a warehousing function. The audiovisual center, which catered exclusively to the instructional needs of the teaching faculty, was primarily a pushcart delivery service. Television (TV) production services, if they existed at all, typically consisted of one black-and-white camera, no editing facilities and a few one-inch, old-style tape playback units.

Interaction among these three independent academic support services was practically nonexistent. Each provided a distinct service and each was intent on developing its own program. Friction often resulted as the areas competed for available funds. In most cases the lion's share of these funds went to the library. Television was in too embryonic a stage of development to be noticed or taken seriously. Audiovisual material was considered the unwanted stepchild or, perhaps more appropriately, the twin in the iron mask.

In the early 1970s a conceptual framework for integrating library AV and TV functions began taking form. The Carnegie Commission on Higher Education, in the *Fourth Revolution*, supports integrated learning resources, stating that:

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nonprint information, illustrations and instructional software components should be maintained as part of a unified informational-instructional resource that is cataloged and stored in ways that facilitate convenient retrieval as needed by students and faculty members.<sup>1</sup>

Similar thinking shaped the 1972 recommendation of the Task Force on Instructional Media at California State University—Chico (CSU—Chico):

Learning resources, e.g., Media Center, Library, Computer Systems, common distribution systems for the resources both on and off campus, etc., should be coordinated so that they become a functioning integrated system.<sup>2</sup>

Chico's library became the focal point for the majority of integrated functions. In a report to the CSU system's Council of Library Directors, the council's Learning Resources Committee reflected this sentiment:

the discipline of librarianship is based on the bibliographic organization of materials; their evaluation and selection, their cataloging and classification, the development of appropriate circulation and delivery systems, and the effective use of the library's resources through reference and instructional services. It is therefore the library's responsibility to add nonprint materials to its collections and to integrate these materials into a single coordinated library learning resource service to the campus.<sup>3</sup>

## **Administration**

Once the concept of integration is accepted, the next step is implementation. It is the administrative function that provides the ways, means, and directions for achieving the goals and objectives. At Chico, the administrative unification of the Meriam Library, the Computer Center, and the newly-formed Instructional Media Center (IMC)—all under the direction and leadership of a dean for learning resources (later changed to dean of information services)—gave impetus to the concept of a functioning, integrated system.

Having the components ready, however, does not always guarantee success—goals and objectives must be clearly articulated, priorities must be set and agreed upon, operations must be analyzed, and most importantly, there must be a firm commitment by both staff and administration to the concept of integration. Otherwise conflict may arise among units over budget, staff, or space allocations; and growth without direction or growth contrary to the overall desired outcome may result.

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The challenge then to CSU—Chico was clear: If integration was to be real, it would make far-reaching demands. Chico had to create a plan, not just for the present, but one that would accommodate new technologies as they appeared and as they were given new applications.

### **Functions**

Many of the functions of the library and of the media center overlap. Therefore, identifying the functions of the library and the media center was the first task (see fig. 1).

#### **Library**

Reference/Consultation  
Collection Development  
Materials Selection  
Acquisition  
Cataloging/Classification  
Circulation  
Interlibrary Loan  
Reserve  
Bibliographies

#### **Audiovisual**

Consultation/Production  
Production Development  
Materials Selection  
Equipment Selection  
Acquisition  
Cataloging of Materials  
Materials Circulation  
Equipment/Delivery  
Off-campus Rental/Loan  
Booking  
Maintenance and Repair  
Production

Figure 1. Functions of the Library and the Media Center

The second task consisted of consolidating and integrating overlapping functions into the appropriate units as illustrated in figure 2. The most logical functions to be handled by the library are *cataloging and classifying* materials, since the discipline of librarianship is based on the organization and classification of information. In addition, one of the objectives of integration efforts is standardized, centralized bibliographic access to the library's holdings regardless of format: a place where each user—whether research scholar, teaching faculty, or student—can gain access to all available material on a given subject regardless of format through one catalog.

It would be misleading to imply that conversion to an integrated catalog can be accomplished without trauma. However, with proper consultation and cooperation between media center and library personnel, problems can be identified and solved to everyone's satisfaction. For the most part the efforts in integrating the cataloging and classification



Function	Library	Media Center
Reference	X	
Consultation	X	X
Collection Development	X	
Production Development		X
Materials Selection	X	
Equipment Selection		X
Acquisition (Materials)	X	
Acquisition (Equipment)		X
Cataloging/Classification	X	
Circulation, Materials	X	
Circulation, Delivery, Equipment		X
Interlibrary Loan	X	
Reserve	X	
Maintenance and Repair		X
Bibliographies/Mediagraphies	X	
Production		X

Figure 2. Consolidation and Integration of Overlapping Functions

functions at Chico have been successful. The first step was the identification of the bibliographic data elements for nonprint material. Next came the realization that the coverage, content, and form of bibliographic information was basically the same for nonprint as for print media. Finally a cataloger was found and trained to begin cataloging nonprint materials. Initially, using the ISBD (International Standard Bibliographic Description) was especially helpful in analyzing the data elements. In addition, the Library of Congress published its MARC formats for media.

The Meriam Library now provides integrated bibliographic access through an online catalog. Although the online catalog seems to be perpetually in a state of being improved, enhanced, and updated, it does have some very definite advantages.<sup>4</sup> However, patron reaction was not always positive insofar as nonprint media was concerned. Some users believed that the integrated catalog was too cumbersome; and while many of the faculty found it advantageous to have complete bibliographic information on all available material, others found it awkward to search thousands of records for books, periodicals, filmstrips, and slides when they were looking for a 16mm film. One of the enhancements of the online catalog most beneficial to integrating nonprint media records into the library's main catalog has been the addition of the

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Boolean search capability which allows patrons to search by format. Another improvement is the ability to access the catalog from remote sites. For example, a faculty member in an office across campus can gain access to the library's catalog by using a terminal, a telephone, and a modem. Likewise, a student hundreds of miles away at one of CSU—Chico's remote learning sites has equal access to the catalog.

### *Acquisition*

Acquisition is another activity best handled through established library procedures. At Chico a portion of the library materials budget is allocated by formula to the academic schools and departments; and funds from the library budget may be used to purchase nonprint as well as print media.

### *Selection and Collection Development*

The library has established material selection and collection development policies and procedures. However, when the decision to add nonprint media was made, the selection task became more complex. A major purpose of nonprint media in an academic setting is the direct support of classroom instruction. Using a particular nonprint item may be an integral part of a course. Therefore, the teaching faculty tend to be more directly involved in selecting nonprint materials than print materials. Due to the fragility, technical complexity, and relatively high cost of nonprint media, additional care is needed in the selection process. The nonprint librarian usually must work closely with the faculty, the collection development librarians, and the acquisitions librarian to verify such information as duplication of material, cost, distribution rights, format, and technical compatibility. The nonprint librarian then coordinates the preview and evaluation process, which often makes use of media center, rather than library, facilities.

On the other hand, the selection and purchase of equipment, whether it be nonprint playback equipment for use by library patrons or sophisticated production equipment, are handled primarily by instructional media center personnel who, in a well-integrated campus operation, will have the responsibility of repairing and maintaining it, wherever it is located—in the classroom, the library, or the media center itself.

### *Production Activities*

Faculty sometimes find that no suitable commercially produced programs are available for a specific class. When this happens they may decide to have a media program produced. Since production activities

are in the realm of the instructional media center, the library should be able to refer the faculty member to a production development committee (or directly to the production center) where a specific media program will be designed to meet the instructional need.

### *Circulation*

Circulation is another traditional library function made more complicated by the addition of media. The problem is often partly due to space and facility limitations, and partly due to staff unwillingness to relinquish traditional practices. Providing playback equipment within the library has been perceived by some as an invasion and occupation of library research and study space. It is true that a mediated work station requires more space than that required for reading or study alone. (Current systemwide standards are: for a mediated work station, 52 sq. ft.; and for a seating space, 25 sq. ft.) In addition, visual supervision of mediated carrels by staff is important for assisting patrons who may need help in the operation and utilization of media equipment. Some types of media equipment are noisy—such as 16mm film projectors or computer printers. Other types of equipment have special lighting requirements. In order to prolong media's usefulness, regular cleaning and inspection of media materials and equipment are essential. While this special handling and allocation of space and facilities requirements are not peculiar to media, they are unique in a library setting. At CSU—Chico, all nonprint media other than 16mm films are housed in and circulated from the library's Nonprint Media Department. The materials are in a closed stack area with limited-loan, in-building circulation. Playback equipment is available in fixed carrels in two large rooms adjacent to the media circulation counter. Although the 16mm films are cataloged by the library and receive Library of Congress call numbers, the old accession numbering system has been retained and is still used for shelving and retrieving the films from the film racks. Circulation of the films outside the building is restricted to faculty for classroom instruction. Preview rooms are provided for in-house pre-viewing or viewing. Films and the appropriate projection equipment are booked and circulated from the Instructional Media Center Booking Office, which is located in the basement of the library building. However, the library staff continue to plan for the time when all formats in the media collection are housed in and circulated from one centralized location.

In 1978 the IMC started a program to "mediate" (that is, to equip with permanent media facilities) the campus classrooms. Currently, over 100 classrooms and laboratories on campus are equipped with

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16mm projectors, slide/tape units, and speakers, all housed in fixed projection booths. Although this has not eliminated the need for physical delivery of equipment, it has reduced the number of daily trips and the delivery workload by slightly more than 50 percent.

The IMC enhances circulation by its electronic distribution of video on the campus twelve-channel, closed-circuit cable television system. The majority of campus classrooms now include television monitors and remote-control devices. By using the remote control, faculty can control a videotape transmission from the central electronic distribution room in the basement of the library building.

### *Reserve*

Reserve is another time-tested academic library function. With some modification in procedure to allow for the physical inspection of circulated media materials, the reserve function works as well for nonprint media as it has traditionally for print media. One solution is to integrate physically all reserve materials in one reserve operation. However, one word of caution: fixed installation playback equipment for nonprint should not be placed too close to the conventional reserve reading area. Often nonprint viewing and listening stations (even with headphones) can create a distraction to a print reader. Also, the lighting requirements for viewing some nonprint media are not appropriate in a reading room. It is best to separate nonprint media carrels from reading areas if at all possible.

Two functions of libraries and media centers appear so similar that integration would seem obvious: interloaning books and off-campus media rentals. However, with media there are so many associated procedures—i.e., scheduling of equipment and location, scheduling people to view the material in the one or two days it is on campus, and coordinating the formal evaluations that are frequently required by distributors—that in practice, a separate operation is justified. The interlibrary loan function may be handled by the library and the off-campus rental of media by the IMC booking office. The turnaround time for off-campus media rentals is usually much faster than realistically can be expected for interlibrary loan. (Of course, if a book on interlibrary loan also carried a rental rate of \$200 a day, the turnaround would possibly be just as rapid!)

In most of the previous instances, consolidation and integration of overlapping functions has proven effective. The concept of information services has increased productivity and improved access and service while eliminating unnecessary duplication.

## Formats

Selection of nonprint media should receive the same careful consideration by subject-specialist librarians as do the print materials in an academic library. Using media selection policies and subject-specialist librarians affords the potential for developing a well-balanced nonprint media collection that meets the teaching needs of the faculty. CSU—Chico's collection, probably larger than average, consists of approximately 12,000 titles in a wide variety of formats. Although initially an attempt was made to adopt certain media formats for the campus, the rapid growth and shifts in media technology made this plan impractical. Other reasons for adding different formats to the collections have been market shifts and price. Although the IMC does produce educational programs for inclusion in the media collection, the major portion of the collection is acquired through commercial distributors.

Market trends of the past few years have influenced the selection process for educational media. Originally the principle format for educational films was 16mm, but commercial distributors gradually began to offer a choice between 16mm and three-quarter inch U-matic videotape cassette. The trend is currently away from three-quarter inch to one-half inch cassettes, with many distributors offering a choice between 16mm film and three-quarter inch U-matic, one-half inch VHS, or one-half inch Betamax videocassette tape. For a while a few distributors offered a fourth choice—videodisc. Curiously, neither the laser nor the capacitance videodisc formats succeeded in the home market and they have all but disappeared. However, the laser disc is beginning to make a comeback in the educational marketplace as an information storage and retrieval device. The laser disc will probably have an important role when used in conjunction with computers for interactive educational programs. (As an early example, personnel from the Instructional Media Center and the library, and a faculty member from the School of Communications at Chico recently collaborated in the design and production of a microcomputer and videotape interactive CAI [computer-assisted instruction] program that is designed to teach library users to use the online catalog. The next step is to transfer the program from videotape to laser videodisc. The integration of the microcomputer and laser disc will offer faster response time, add the capability to insert still photographs, and give more editing precision.)

Price can be a considerable factor in format selection. One extreme example illustrates this point—to replace one very popular film, the 16mm format cost \$900, VHS cost \$575, Betamax cost \$450, and the videodisc cost \$35. However, most libraries and media centers do not

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have an adequate array of videodisc playback equipment whereas they do have a large installed base of videotape players and film projectors. Consequently, price alone cannot and indeed should not govern format decisions.

### *16mm Educational Film and Video Formats*

Even though the 16mm educational film continues to climb in price, approximately 100 new titles are added to the CSU—Chico film collection each year. Given a choice, some faculty prefer paying the higher price for the 16mm version of a film believing that 16mm continues to be the better teaching/learning format in the classroom. Some proponents of film over television projection as a teaching tool in the classroom say the reasons are sociological—e.g., large-screen, movie theater viewing *v.* small-screen, television home viewing. Others say the reasons are physiological—e.g., limited eye movement or the “shut-down” reaction of the left brain to the repetitive light stimuli of the television screen. However, probably the most convincing argument is the simple fact that, seen side by side, the resolution and image quality of 16mm film projected onto a large screen looks much better than the same image projected through a television monitor. In spite of the preference for film among some of the faculty, Chico’s video collection grows steadily, keeping pace with the 16mm collection. Currently, Information Services provides in-house and classroom viewing access to the following motion picture formats: 8mm and 16mm films, three-quarter inch U-matic and one-half inch VHS videocassettes, and laser and capacitance videodiscs. Faculty still make primary use of the permanent 16mm film collection, usually in direct support of classroom instruction. About 20 percent is in-house viewing by students and other patrons for research and class assignments. Use of the videocassette collection is about equally divided between classroom and in-house viewing. The videodisc collection, consisting mainly of feature films and art films, is mostly for in-house viewing, in part due to the rarity of playback equipment around campus. About 15 percent of the videodisc collection use is for instructional purposes, primarily by cinema studies students and film production classes. The remaining 85 percent of videodisc usage is for entertainment and cultural enrichment.

### *Film Loop Format*

Although the film loop is not a popular format for the college classroom, it is an effective tool for teaching the single concept. The Meriam Library has a small collection of film loop titles. Viewing is almost solely in-house. It would seem that the film loop is being

replaced by video. In fact, film loop equipment is becoming difficult to locate for replacement.

### *Slide, Filmstrip, Sound Slide, and Sound Filmstrip Formats*

The slide, sound slide set, filmstrip, and sound/filmstrip set formats are an important part of the media collection. When motion is not essential in a visual presentation, slides and filmstrips offer a relatively inexpensive alternative to motion pictures. However, the use of sound enhances most visual presentations, not just motion pictures, and therefore more and more sound slide or sound/filmstrip sets are being produced. Although the sound portion of these sets is usually available on audiodisc and audiocassette tape, the library at CSU—Chico has adopted the slide/tape whenever possible having found that slides and audiocassette tapes are less susceptible to damage than records and filmstrips in the hands of the inexperienced. However, when a particular program is not available in slide format, the filmstrip version is purchased. In-house production is limited to slide and slide/tape sets. Of these formats, utilization is equally divided between instruction in the classroom and individual use within the library.

### *Computer Software Formats*

The newest formats to be added to the media collection are computer software. Policies and procedures to acquire, catalog, store, and circulate software are still developing; consistency with policies for other formats is the desired goal. Library material funds allow the purchase of software which is added to the library's collection and made available to the entire campus. Traditionally, such material is available for use in the library. With this policy in mind the library does not purchase software packages intended for office or laboratory settings. Recognizing that software evaluation is a problem throughout the campus, the library is investigating the feasibility of setting up a software/microcomputer reference area to provide coordination and processing necessary to support the academic and research needs of the university.

The library staff is working closely with the Academic Computing Coordinator, a faculty position reporting directly to the Dean of Information Services, to develop and expand computer software and hardware services, and in particular a microcomputer laboratory. The microcomputers selected for the campus include the Apple II, the Apple MacIntosh, and the IBM PC. Currently, several of each of these machines are located in the library, but they are restricted to faculty under the terms of the special grant through which they were acquired.

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Plans are under way to add more machines and make them available to all library users. Obviously many problems are inherent in introducing new technology into the library. However, the library is slowly developing its response to this valuable educational medium.

### *Overhead Transparencies Formats*

Overhead transparencies remain an economical and practical instructional tool. The collection is small but well used by the teaching faculty for classroom instruction. Transparencies are so easily produced, particularly with today's copying machines, that the purchasing of commercially-prepared transparencies is much less than it used to be.

### *Games, Kits, and Simulations Formats*

Although the nonprint collection contains a few games, kits, and simulations, these formats have been unpopular with our academic users.

### *Sound Recordings Formats*

A large and well-balanced sound recording collection is essential to any academic library's nonprint collection. Most, if not all types of music should be represented on either audiocassette or phonograph records. The spoken word recording should also be very prominent in the collection. Sound recordings are the only formats at CSU—Chico that circulate outside the library for home use; they have a three-day circulation period.

## **Staffing**

Figure 3 shows the place of nonprint media in the organization chart of the CSU, Chico Information Services unit. Although the Nonprint Media Department Head is an Instructional Media Center-funded position, the reporting structure is through the library's Access Services Division. The primary responsibility of this position is the overall coordination of media utilization. This includes the coordination of those people, places, and things that give optimal access to and utilization of nonprint media resources. The only library-funded staff member assigned to nonprint media is the Desk Supervisor (Library Assistant II), who reports to the Nonprint Media Department Head. The other three support staff positions within the Nonprint Media Department are located in and funded by the Instructional Media Center.

There are four professional positions in the Instructional Media Center. The director's position, which is at the Associate Dean level,



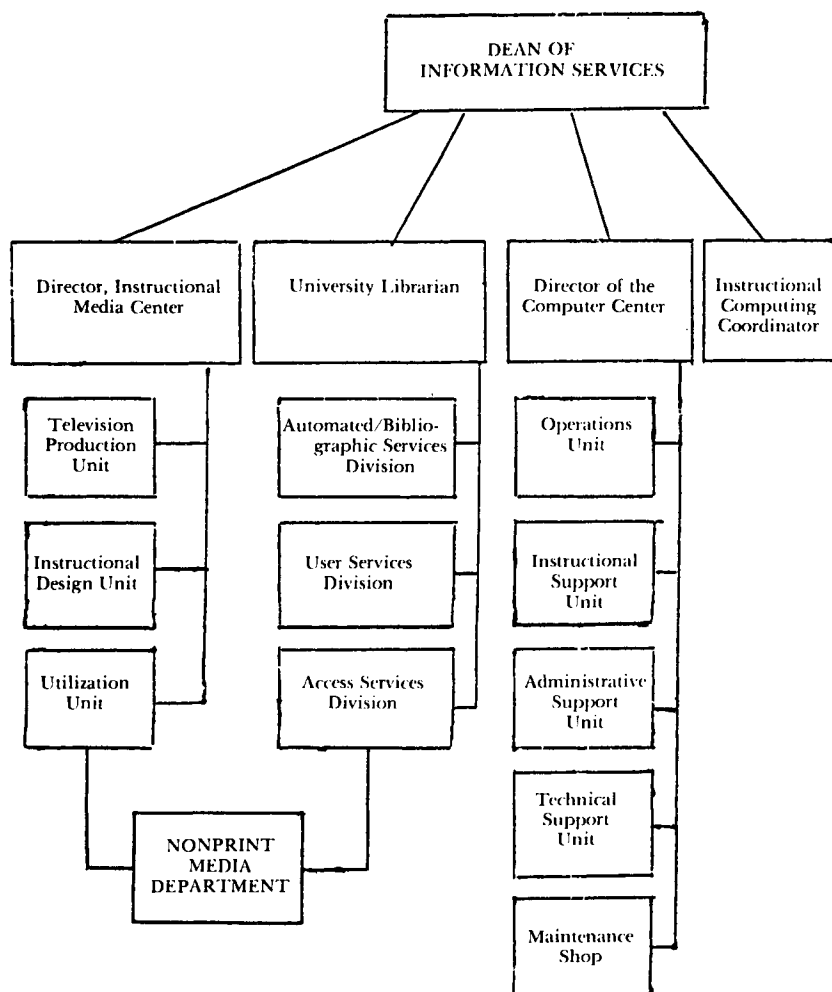


Figure 3. California State University—Chico, Information Services Organization (1 April 1984)

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reports to the Dean of Information Services. The remaining three professional positions consist of two coordinators and the librarian, the latter of whom also functions as the library's Nonprint Media Department Head. Each is responsible for a specific service function and service area and all share, more or less equally, in the instructional design and production development process. Each brings to the process a particular set of skills, training, and knowledge. For example, the nonprint librarian will provide the necessary research for a new program being considered for production and/or assist in actual production in addition to managing the IMC's arm of the booking/distribution service.

Prior to integration, the Instructional Media Center spent more than half of its allocated funding on the delivery of media and equipment. This is not unusual since physical delivery of all media formats constituted IMC's primary means of dissemination. However, due to integration of shared and overlapping functions with the library, the addition of mediated booths to over 100 campus classrooms, and electronic distribution to classrooms through closed-circuit television, emphasis has shifted from one-dimensional access to the multifunctional center providing media production, instructional television, satellite reception and transmission, and basic audiovisual services.

### **Facilities**

It is difficult to describe facilities without discussing the services provided in and through those facilities, particularly in the context of a media center. In 1974 the Instructional Media Center and the library moved into a new building that was known as the Learning Activities Resources Center. The name has since been changed to the Meriam Library, but the original appropriately reflected the mission and the charged atmosphere of the time.

The Meriam Library is a large, modern building with four floors and a half-basement. The Instructional Media Center, which is located in the basement, concentrates on the design, production, and utilization of instructional media materials; and it possesses state-of-the-art television studios, electronic distribution facilities, and satellite transmission and reception capabilities.

The utilization component, which is a shared function with the library, is managed by the Nonprint Media Librarian and focuses on the coordination of people, places, and things to ensure the most effective learning/teaching outcome. Conceptually, services included under utilization are: access points for nonprint materials within the library,

the IMC booking and distribution area, and the electronic distribution area. The IMC booking and distribution areas house the 8mm and 16mm film collections and the circulating equipment. All materials circulating from this area are booked prior to use. The booking office also coordinates the very important preview and evaluation process required for all films prior to purchase.

Nonprint media facilities within the library also include three fully mediated library education classrooms. These rooms and equipment are used frequently by library faculty for bibliographic instruction, for teaching the use of the online catalog, and for various workshops throughout the year; and the rooms are available for class use on a first-come, first-served basis. Twenty-four fixed-installed, six-sided mediated carrels provide in-house viewing for all media housed in the library nonprint media section.

Another heavily used area is a separate reference and index section for nonprint media. This area is divided into three sections. The first contains duplicate copies of important nonprint media reference books and indexes; the second includes the catalogs of most major film rental sources, and the third—a rather large section—provides access to hundreds of media distributors' catalogs and brochures. Although there is some duplication of reference books that are in the main reference collection, having a special, nonprint media reference center has helped reduce the frustration in locating and selecting media materials for purchase or rent.

## Conclusion

It takes time to effect change in all institutions of higher education. However, CSU—Chico in the last ten years has witnessed positive change and growth. Where once there were three independent, segregated operations, there is now a single, functioning, integrated system called Information Services. Traditional functions have been realigned and consolidated into more efficient operations. Other functions have been enhanced and revitalized with new technology which in turn has provided better and more flexible service. Integration not only affords better and expanded service, but it allows service to a greater physical area through ITFS (Instructional Television Fixed Service) and satellite transmission.

The incorporation of the new technology would not have been as effective had it not had the support of the library. The new technology manifested itself as a lot of machines and gadgetry. It needed the library's expertise, procedures, and user-oriented environment to bring

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the patron into a fruitful relationship with that technology. While this article has concentrated on the integrated functions and cooperative efforts of the instructional media center and the library, this is not meant to imply that the computer center has not taken an active part in the efforts toward integration. The library has benefited significantly from the advice and help of computer center personnel. The future will doubtless see much greater collaboration among the library, nonprint media center, and the computer center. Plans for installing the micro-computer lab within the library will involve computer center staff at the policy, operations, and technical levels. Such expanded services through integration enable information services to create for the campus the foundation for academic information support in the twenty-first century. Future developments will reflect a natural shift in emphasis and a changing technology, not a shift away from the original precept—i.e., providing the best in academic support services through cooperative relationships.

### ACKNOWLEDGMENT

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# Copyright Law and Educational Media

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IVAN R. BENDER

ON 19 OCTOBER 1976, President Gerald Ford signed Public Law 94-553, otherwise known as "General Revision of Copyright Law."<sup>1</sup> This statute, which became effective of 1 January 1978, marked only the second time in the twentieth century that the U.S. copyright laws underwent general revision. Since an omnibus revision of copyright had not taken place since 1909,<sup>2</sup> it was generally agreed by most legal scholars that the former laws were outmoded and had not kept pace with the great technological innovations of our time. Thus, present copyright laws represent an attempt by the Congress of the United States to protect more adequately the creators of copyrighted works, while at the same time providing a reasonable means of serving the needs of users.

## Background

Powers assumed by Congress in passing the copyright law stem from Article I, Section 8, of the United States Constitution, which states in part: "The Congress shall have Power...To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries."<sup>3</sup> It is therefore obvious that the framers of the Constitution intended that copyright laws, as well as laws pertaining to patents, were within the province of the federal government.

Although some doubt existed before the effective date of the present copyright law whether the federal government had the *exclusive* power

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to enact copyright laws, the present law makes it clear that all other rights falling within the scope of copyright are to be governed exclusively by federal statute. Although any claim of copyright infringement or any other rights that existed under a variety of individual state copyright statutes in effect before 1 January 1978 were not eliminated, any cause of action arising after 1 January 1978 must be governed exclusively by Public Law 94-553.

In the late 1950s, Congress was advised by the Library of Congress that a thorough study of the then-present copyright laws should be undertaken to determine the need for revision. At that time money was appropriated for this study which culminated in the general revision bill enacted in 1976. Although it is not the purpose of this article to review the protracted hearings and controversies which marked the revision process, it is important to note that the educational use of copyrighted works in such places as libraries and classrooms was strongly debated and was a significant reason for the delays which postponed passage of the general revision bill.

The purpose of copyright protection is to afford authors and other creators of intellectual properties the right to determine when and how their respective works are to be used or performed, as the case may be. Most lose sight of the fact that when a person acquires possession of a book, film, or sound recording (or similar creative work), that person has custody of the property of the author of that work, whether the author be an individual or a corporate entity. For example, when a book is purchased the purchaser owns the cover and the paper on which the words are printed, but not the words themselves. It is the unique expression embodied in those words which is the property of the copyright owner. Of course, it goes without saying that the same holds true for any other form of copyrighted work. A basic understanding of this principle is important in dealing with the requirements which the law places upon the users of copyrighted works. However, at the same time, that law makes certain requirements of users; it also requires specific things of authors who claim copyright ownership; and it is these requirements placed upon both parties which will form a major theme of this article.

### **Requirements of Authors**

Copyright law requires that, in order for a work to be copyrightable, it must be original and "fixed in any tangible medium of expression, now known or later developed, from which they can be perceived,

reproduced, or otherwise communicated, either directly or with the aid of a machine or device.”<sup>4</sup> That same section of the copyright law places works of authorship into the following categories: literary works; musical works (including any accompanying words); dramatic works (including any accompanying music); pantomimes and choreographic works; pictorial, graphic, and sculptural works; motion pictures and other audiovisual works; and sound recordings. Copyright cannot be obtained in an idea by itself without some unique expression.<sup>5</sup>

For a copyright interest to be perfected, whenever a work is published with the authority of the copyright owner, a notice of copyright must be placed on all copies of the work in distribution, with the form of notice as may be required by the Register of Copyrights. Failure on the part of the copyright owner to insert a proper notice on each copy of a work may result in forfeiture of copyright, unless the omission is corrected as specified by the statute.<sup>6</sup> Another requirement placed upon those who claim copyright ownership is to register the work with the United States Copyright Office of the Library of Congress, although failure to register a work may only result in the inability by the copyright owner to sue for injunctive relief or statutory damages. Failure to register will not result in the work entering the public domain.

Another requirement placed upon those who claim ownership of copyright is to deposit with the Library of Congress a copy or copies of the work in which copyright is claimed, as specified by law and regulations adopted by the Copyright Office. The deposit requirement is one of the principal methods by which the Library of Congress obtains its own copies of every work on which copyright is claimed as a result of publication in the United States. The system of notice and the requirements of deposit seem to serve the public interest well, although extensive studies have recently been undertaken by the Copyright Office to determine whether these requirements should be retained.

### **Sole Rights of Copyright Owners**

Section 106 of the copyright law states:<sup>7</sup>

The owner of copyright...has the exclusive rights to do and to authorize any of the following:

- (1) to reproduce the copyrighted work in copies or phonorecords;
- (2) to prepare derivative works based upon the copyrighted work;
- (3) to distribute copies or phonorecords of the copyrighted work to the public by sale or other transfer of ownership, or by rental, lease or lending;
- (4) in the case of literary, musical, dramatic, and choreographic



works, pantomimes, and motion pictures and other audio-visual works, to perform the copyrighted work publicly; and  
 (5) in the case of literary, musical, dramatic and choreographic works, pantomimes, and pictorial, graphic, or sculptural works, including the individual images of a motion picture or other audio-visual work, to display the copyrighted work publicly.

It is important to examine more thoroughly a portion of the exclusive rights just enumerated. The first right—namely, to reproduce the copyrighted work—is the foremost sole right granted copyright owners although, given the state of technology as it exists today, it may not necessarily be the most important. The second right—to prepare derivative works—provides the copyright owner the sole right to do or to authorize such things as translations, musical arrangements, dramatizations, fictionalizations, motion picture versions, abridgements, and the like. According to the definition of derivative work as contained in Section 101 of the copyright law: “Work consisting of editorial revisions, adaptations, elaborations, or other modifications which, as a whole, represent an original work of authorship, is a derivative work.”<sup>8</sup>

The third right granted to copyright owners—to distribute copies to the public—probably needs little explanation except to say that it is this provision which has given rise to the “first-sale doctrine.”<sup>9</sup> In essence, the first-sale doctrine says that if you purchase a copyrighted work outright you may resell it or reconvey your interest to another party without permission of the copyright owner unless you are prohibited from doing so under a restrictive covenant of a contract. This may soon be modified by Congress as a result of legislation which has been introduced to eliminate the doctrine itself.

The fourth of the enumerated sole rights of copyright owners is probably one of the most important to examine. This gives the copyright owner the sole right to perform or authorize public performances of the work. In the case of motion pictures and other similar works which are designed to be performed, this becomes an extremely critical right. As defined in the copyright law, to perform a work means to play it by means of a device or process. To perform a work publicly, as defined in the copyright law, means “to perform or display it at a place open to the public or at any place where a substantial number of persons outside of a normal circle of a family and its social acquaintances is gathered.”<sup>10</sup> By definition a classroom or a library generally represents a place where a performance of a motion picture or a videotape would constitute a public performance. As defined in the copyright law it does not mean necessarily that the public is invited to attend the performance. Although the old copyright law discussed a public performance

in terms of whether or not it was for profit, the present law makes no such distinction, whether it be for musical works or any other kind of copyrighted work.

In rendering his decision in the copyright infringement action known as the BOCES case (*Encyclopaedia Britannica Educational Corporation et al. v. Board of Cooperative Educational Services et al.*)<sup>11</sup> Justice John Curtin agreed that a performance of a film or a videotape in a classroom constitutes a public performance for purposes of copyright law. Although there exists an important exception to this particular right of copyright owners which will be discussed later in this article, it is important to bear in mind the public performance issue.

The fifth right of copyright owners, which pertains to a display of a work, is perhaps somewhat less significant for the readers of this article than the other rights previously enumerated. Still it is one which should be kept in mind as the same rights regarding public performance or display relate to this portion of the rights of copyright owners.

### **Fair Use and Other Exceptions to Sole Rights**

At this point, the exploration of the copyright laws will shift from sole rights of copyright owners to certain relevant exceptions. These exceptions will be examined in the order in which they appear in the copyright law itself. For that reason, the discussion begins with the concept of fair use. Much has been written and discussed about the fair use doctrine which, until the present copyright law was enacted, was a judicially applied theory, as the prior copyright law contained no reference to it.

Fair use evolved as a defense to a claim of copyright infringement. It arose out of a need to provide an equitable rule of reason for the purpose of recognizing that the commission of certain acts, such as copying and performance, should not result in a successful claim of infringement because such acts were defensible and, depending on the facts in each individual instance, should not result in the award of damages to an infringement claim. In most instances, when a court ruled that a use was a fair use, the fair use doctrine stated that copying or other similar acts were not substantial and, in the early application of the fair use doctrine, concentrated more upon the amount used rather than on other aspects. Presumably, this was the case largely because duplication of a copyrighted work was the most common infringing act. However, unauthorized duplication has now become but one of many ways in which the rights of a copyright owner can be infringed.

In order to discuss fair use one must be familiar with its basic premise. Fair use, which is Section 107 of the copyright law, reads as follows:<sup>12</sup>

Notwithstanding the provisions of Section 106, the fair use of a copyrighted work, including such use by reproduction in copies or phonorecords or by any other means specified by that section, for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research, is not an infringement of copyright. In determining whether the use made of a work in any particular case is a fair use, the factors to be considered shall include—

1. The purpose and character of the use, including whether such use is of a commercial nature, or is for nonprofit, educational purposes;
2. The nature of the copyrighted work;
3. The amount and substantiality of the portion used in relation to the copyrighted work as a whole; [and]
4. The effect of the use upon the potential market for or value of the copyrighted work.

Next, each portion of the fair use concept will be reviewed. The Congress did not add or detract from the fair use concept as it was developed by judicial decisions before it became part of the copyright law itself. Moreover, although the fair use section is neither lengthy nor explicit, it provides the flexibility needed to interpret fair use depending upon the particular facts in each instance so as to allow courts to balance the needs between authors and users. If on the other hand the fair use section was lengthy and contained specific rules, it might work against the interests of everyone.

The text of the fair use section gives some examples of when to apply the fair use doctrine by enumerating such activities as criticism, comment, news reporting, teaching, scholarship, or research. Again, this is an area which can be expanded upon, although Congress undoubtedly has left that up to the courts.

Examining the four aspects of fair use one at a time, let us first look at the purpose and character of the use. In order to "pass" the fair use test, the first hurdle is the purpose of the use itself which was just discussed. The text also says that one must examine whether or not the use is of a commercial nature or is for nonprofit educational purposes.

The second point, the nature of the copyrighted work, can be best explained by comparing the difference between a textbook and a motion picture film. A textbook is designed and intended for use by one person who perhaps will share it with another in some instances. On the other hand, a motion picture is intended for performance before an audience, and consequently, only one copy of the film is necessary in order to

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project it for viewing by many people simultaneously. The rather obvious conclusion is that the potential market for the textbook is much greater than that for the motion picture film.

Moving into the third area, which refers to the amount and substantiality of the portion used (also known as the "quantitative test"), it is clear that the more one uses a copyrighted work without permission, the less effective will be the employment of fair use as a defense against an infringement action.

The last aspect of fair use, or the effect of the use upon the potential market for or value of the copyrighted work, is the most difficult one to satisfy. It proves to be particularly difficult because courts look not only upon the detrimental effect of unauthorized use as a result of past acts but also upon the future effect. In other words, if the use made of a work without permission has diminished the potential value of the work for future exploitation by the copyright owner, it is likely that the court would rule against the fair use defense. The United States Senate, in its report accompanying the copyright law, comments upon the fourth aspect of fair use by stating:<sup>13</sup>

This factor must almost always be judged in conjunction with the other three criteria....As in any other case, whether this would be the result of reproduction by a teacher for classroom purposes requires an evaluation of the nature and purpose of the use, the type of work involved, and the size and relative importance of the portion taken. Fair use is essentially supplementary by nature, and classroom copying that exceeds the legitimate teaching aims such as filling in missing information, or bringing a subject up to date would go beyond the proper bounds of fair use. *Isolated instances of minor infringements, when multiplied many times, become in the aggregate a major inroad on copyright that must be prevented* [emphasis added].

Although much more might be said about the fair use doctrine, one other area has become of great interest to those who work with media materials. This involves the "Guidelines for Off-Air Recording of Broadcast Programming for Educational Purposes." During the final days of consideration of the copyright law revision by the House of Representatives, various educational interest groups argued that some relief under the fair use doctrine was necessary for off-air videotaping by teachers and media personnel as well as librarians for the purpose of using those videotapes in classrooms and in libraries. Because there was little time to consider this complex question, the House of Representatives indicated that it would be open to future action in this area upon presentation of the issues. Referring to the House of Representatives report accompanying the copyright law revision, it said:<sup>14</sup>

The problem of off-air taping for nonprofit classroom use of copyrighted audio-visual works incorporated in radio and television broadcasts has proved to be difficult to resolve. The Committee believes that the fair use doctrine has some limited application in this area, but it appears that the development of detailed guidelines will require a more thorough exploration than has so far been possible of the needs and problems of a number of different interests affected, and of the various legal problems presented. Nothing in Section 107 or elsewhere in the bill is intended to change or prejudge the law on the point.

Following the passage of the copyright law, but before its effective date, a three-day conference was held in Airlie, Virginia in July 1977, cosponsored by the U.S Copyright Office and the Ford Foundation. The purpose of this conference was to bring together all the interested parties, identify the scope of the problem, and suggest procedures for developing guidelines. Although it was not intended that the actual guidelines would be developed at the conference itself, it was hoped that the parties concerned would continue to meet and eventually develop guidelines for consideration and adoption by the Congress.

For a variety of reasons such meetings did not occur, and the House of Representatives, recognizing that the problem needed some resolution, established a committee to negotiate guidelines in March 1979. The committee consisted of nineteen individuals representing almost every conceivable interest group which might be affected by off-air guidelines. Approximately one year later, the committee informed Congress of the guidelines which it had approved, although even the negotiating committee did not unanimously adopt these guidelines. The guidelines read as follows:<sup>15</sup>

1. The guidelines were developed to apply only to off-air recording by nonprofit educational institutions.
2. A broadcast program may be recorded off-air simultaneously with broadcast transmission (including simultaneous cable retransmission) and retained by a nonprofit educational institution for a period not to exceed the first forty-five consecutive calendar days after date of recording. Upon conclusion of such retention period, all off-air recordings must be erased or destroyed immediately. "Broadcast programs" are television programs transmitted by television stations for reception by the general public without charge.
3. Off-air recordings may be used once by individual teachers in the course of relevant teaching activities and repeated once only when instructional reinforcement is necessary, in classrooms and similar places devoted to instruction within a single building, cluster or campus, as well as in the homes of students receiving formalized home instruction, during the first 10 consecutive school days in the 45 calendar day retention period. "School days are school session days—not counting

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weekends, holidays, vacations, examination periods, or other scheduled interruptions—within the 45 calendar day retention period.

4. Off-air recordings may be made only at the request of and used by individual teachers. They may not be regularly recorded in anticipation of requests. No broadcast program may be recorded off-air more than once at the request of the same teacher, regardless of the number of times the program may be broadcast.
5. A limited number of copies may be reproduced from each off-air recording to meet the legitimate needs of teachers under these guidelines. Each additional copy shall be subject to all provisions governing the original recording.
6. After the first 10 consecutive school days, off-air recordings may be used up to the end of the 45 calendar day retention period only for teacher evaluation purposes, i.e., to determine whether or not to include the broadcast program in the teaching curriculum, and may not be used in the recording institution for student exhibition or any other non-evaluation purpose without authorization.
7. Off-air recordings need not be used in their entirety, but the recorded programs may not be altered from their original content. Off-air recordings may not be physically or electronically combined or merged to constitute teaching anthologies or compilations.
8. All copies of off-air recordings must include the copyright notice on the program as recorded.
9. Educational institutions are expected to establish appropriate control procedures to maintain the integrity of these guidelines.

Upon official notification of these guidelines, Congressman Robert Kastenmeier did not hold hearings, but did recognize the guidelines by referring to them in a House report accompanying a revision of the criminal penalties section of the law. As a result of this process, the question has often arisen as to whether the guidelines have any legal standing. Most legal copyright authorities have taken the position that the guidelines would be taken seriously by a court faced with a claim of infringement based upon off-air taping for educational purposes.

Although the guidelines for off-air recording are reasonably clear, there are some points worth highlighting. For one thing, it should be noted that the principal thrust of the guidelines deals with the concept of spontaneity, which basically requires a prior request from a teacher rather than recording in anticipation of such a request. During the discussion leading up to the drafting of the guidelines, this issue was thoroughly discussed because copyright owners were fearful of the possibility that the guidelines would lead to indiscriminate copying. As a general rule, fair use has seldom been interpreted as permitting the copying or performance of an entire work. Consequently, the off-air guidelines have broken substantial new ground in this respect. The concept of spontaneity also retains the original thinking which went

into the development of the "Guidelines for Classroom Photocopying in Not-for-Profit Educational Institutions" and "Guidelines for Educational Uses of Music" which were developed as part of the copyright law revision and which appear in the House of Representatives report.<sup>16</sup> The issue of spontaneity is prevalent throughout those guidelines and seems to meet the needs of educators, who have always stressed the need to be able to use copyrighted works in certain instances without permission because of the "teachable moment."

From time to time, the question has arisen whether the off-air taping guidelines are applicable to libraries, since the first numbered paragraph indicates that they are intended to apply "only to off-air recording by nonprofit educational institutions."<sup>17</sup> Without a specific reference to libraries, it seems clear that school libraries and academic libraries were intended to fall within the province of the guidelines. Whether public libraries are included is a bit more difficult to answer, although it does appear that public libraries currently may avail themselves of the terms and conditions of those guidelines.

### **The BOCES Case**

In the fall of 1977, three educational film companies filed a copyright infringement suit against an educational institution, making one of the rare times during the course of copyright history that such an event has occurred. The plaintiffs were Encyclopaedia Britannica Educational Corporation, Learning Corporation of America and Time/Life Films, Inc. The defendant was the Board of Cooperative Educational Services (BOCES), First Supervisory District, Erie County (Buffalo, New York).<sup>18</sup> In addition to the BOCES itself, several individual media supervisors were accused of violating the copyrights of various films owned by the three plaintiffs through the off-air videotaping of television broadcasts of the plaintiffs' films. The copying was apparently conducted on a massive scale, and until the lawsuit was filed BOCES made a practice of videotaping programs from all of the major networks and the local PBS station without regard to any request from teachers and without obtaining permission from the copyright owners.

It was not until 31 March 1983 that Justice John Curtin released his decision, finding the defendants guilty of copyright infringement. He fined the defendants a total of \$63,500 in statutory damages and assessed court costs of \$15,000. The defendants' own legal fees exceeded \$200,000.<sup>19</sup>

Judge Curtin did not accept a claim of fair use on the part of the defendants. In one portion of his decision, he wrote that "any temporary

use by BOCES of plaintiff's copyrighted works would interfere with the marketability of these works, and the cumulative effect of this temporary videotaping would tend to diminish or prejudice the potential short-term lease or rental markets for these works."<sup>20</sup> Although there are substantial differences of opinion in terms of how far-reaching Judge Curtin's decision is, some have seen his rejection of a fair-use claim as an indication that the off-air taping guidelines will have little or no application in the future. On the other hand there is language in the decision which seems to state otherwise. At one point the judge says that "the court notes the possibility that some limited or temporary use of plaintiffs' televised works might be considered fair use under the New Act."<sup>21</sup> One must bear in mind that the facts of this case and the cause of action required the judge to make his decision based upon the law in existence at that time, as the new copyright law did not become effective until 1 January 1978. To be sure, it is safe to assume that film belonging to the three plaintiffs in this case did not fall within the scope of the guidelines since these three organizations publicly stated that they did not want to adopt them.

Industry analysts have felt that, if the guidelines were in effect at the time the facts surrounding the BOCES case emerged, there may have been no infringement simply because the Erie County BOCES group would have adhered to the guidelines. While such a position is conjecture, those who have favored the development of the guidelines maintain that it is a positive step in reconciling the needs of copyright owners and the desire of schools and libraries to have greater access to copyrighted works.

### **The Sony Case**

In 1976 Sony Corporation of America was sued by Universal City Studios and Walt Disney Corporation for copyright infringement, alleging that consumers purchasing the videotape recording equipment manufactured by the defendant were using it to record films owned by the plaintiffs and that these videotapes were illegal and violated the copyright statute both in terms of illegal copying and illegal performances.

The case made its way through all levels of the federal judiciary system, being first resolved in favor of the defendants by the District Court, whose opinion was reversed by the U.S. Court of Appeals for the 9th Circuit. The case was finally appealed to the U.S. Supreme Court and decided on 17 January 1984.<sup>22</sup>



The Supreme Court ruled in favor of the original defendant, Sony Corporation of America. The Supreme Court found that use of videotape recorders by individuals for performance of videotapes made of television programs by off-air recording for private, noncommercial time-shifting in homes "satisfies the standard of non-infringing uses both because the plaintiffs had no right to prevent other copyright holders from authorizing such time-shifting for their programs, and because the District Court's findings revealed that even the unauthorized home time-shifting of plaintiff's programs is legitimate fair use."<sup>23</sup>

The Supreme Court stated that the U.S. Congress should clarify the situation regarding home recording and home use of off-air videotapes. Subsequent to the Supreme Court decision several bills have been introduced in the legislature to do just this. However, as of early 1985, no legislation had yet been enacted although the opinion of the highest court of the land is definitive on the point.

There is a significant and critical distinction between the Sony case and the BOCES case, dealing with the issue of public performance. It is clear from the opinion in the BOCES case that Judge Curtin reaffirmed the concept that the use of videotape in a classroom constitutes a public performance as defined in the copyright law. On the other hand, the Sony case did not involve or concern itself with the issue of public performance. As mentioned earlier, public performances are one of the rights reserved to copyright owners, although there is an important exception to this sole right.

### **Exempt Public Performances**

No doubt, one of the most critical aspects of the copyright law for those involved in teaching is entitled "Section 110, Limitations on Exclusive Rights: Exemption of Certain Performances and Displays." The only portion of this section which is explored here is Section 110(1), which reads as follows:<sup>24</sup>

Notwithstanding the provisions of Section 106, the following are not infringements of copyright: (1) performance or display of a work by instructors or pupils in the course of face-to-face teaching activities of a nonprofit educational institution, in a classroom or similar place devoted to instruction, unless, in the case of a motion picture or other audio-visual work, the performance or the display of individual images is given by means of a copy that was not lawfully made under this title, and that the person responsible for the performance knew or had reason to believe was not lawfully made.

Although educators may avail themselves of the privileges contained within the exemptions so stated, this one section has given rise to

more erroneous interpretations than any other. In order to understand more fully the requirements of this section, it would be well to examine each phase separately. First, the performance must take place in the course of face-to-face teaching activities of a nonprofit educational institution. A House of Representatives report states in part:<sup>25</sup>

"Face-to face teaching activities"...embrace instructional performances and displays that are not "transmitted." The concept does not require that the teacher and students be able to see each other, although it does require their simultaneous presence in the same general place. Use of the phrase, "in the course of face-to-face teaching activities," is intended to exclude broadcasting or other transmissions from an outside location into classrooms, whether radio or television, or whether open or closed circuit. However, as long as the instructor and pupils are in the same building or general area, the exemption would extend to the use of devices for amplifying or reproducing sound and for projecting visual images.

Most legal authorities agree, therefore, that a closed circuit television system confined to a single building would qualify for the face-to-face aspect of the 110(1) exemption. The meaning of a nonprofit educational institution speaks for itself and does not need any elaboration.

The next requirement is that the performance must take place "in a classroom or similar place devoted to instruction." Here again, the House of Representatives report says in defining this that "performance in an auditorium or stadium during a school assembly, graduation ceremony, class play, or sporting event, where the audience is not confined to the members of a particular class, would fall outside the scope of the clause (1)."<sup>26</sup> By the same token, there are instances when a particular locale can become a classroom in spite of the fact that the location is not typically used as a classroom. This would, of course, depend upon the facts in each instance. The essential element, however, is that a teaching activity is being carried on. The House of Representatives elaborates upon this portion of the statute by stating that "the 'teaching activities' exempted by the clause encompass systematic instruction of a very wide variety of subjects, but they do not include performances or displays, whatever their cultural value or intellectual appeal, that are given for the recreation or entertainment of any part of their audience."<sup>27</sup>

Finally, the copy of the film or videotape which is used in a performance, in order to qualify for the Section 110(1) exemption, must be given by means of a copy which was lawfully made, or at the very least, that the person who is responsible for conducting the performance did not have reason to believe that the copy was not lawfully made.

The question has often arisen whether Section 110(1) applies to the use of videotapes in libraries. Except in extremely rare instances, and confined to those instances where *all* of the qualifications of Section 110(1) are met, the use of a videotape in a library, which constitutes a public performance, would not be permitted unless specific permission is given by the copyright holder or its authorized agent.

Why is this subject so critical today? The answer is probably well known to most of the readers of this journal, as it would appear that *any* lawfully made videotape may be publicly performed without permission if it meets the qualifications just reviewed. Of course, this applies to videotapes put into distribution for the primary purpose of home viewing as well as videotapes supplied by companies which provide a public performance license to those who license or purchase the videotape or film in question. When a film or videotape is purchased from a company which is authorized to grant public performance rights, there are usually no restrictions on where the public performance may take place. However, if a videotape is purchased or rented from a source which does not grant public performance rights, then the *only* public performances which are legal are those which are prescribed by Section 110(1).

There are some basic distinctions between the process by which videotapes and films get into the marketplace, depending on the purpose of the marketing effort. For example, the home video market is much broader and the potential is much greater than in the case of, for example, the classroom and library market for audiovisual materials. Because of market limitations, the copyright owner of a film licensed for classroom and library use generally receives a far greater royalty per unit sold or licensed than that same copyright owner would receive per unit in the home video marketplace. Although the rights being granted are valuable in each instance, the realities of the marketplace determine royalty rates, royalty guarantees, and consumer prices. Although it is not illegal for an organization involved in distributing to the home market at the same time to sell or rent to the educational marketplace, the purchaser or licensee must use extreme caution as to the manner and place where the videotapes are being used. It should be apparent from this discussion that Section 110(1) is not intended to be an overall "educational" exemption, but rather has critical and important limitations.

Nobody wants to be in the position of being sued for copyright infringement, especially since the penalties, if stated only in terms of statutory damages, can range from \$250 to \$10,000 per infringement.<sup>28</sup> By multiplying the statutory damage principle by the number of times a

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film or videotape is illegally performed, one can readily see how damages can add up to an astronomical amount if the situation is left uncontrolled and unsupervised. One must also bear in mind that, in copyright litigation, individuals as well as the institution can be named in the lawsuit, which can prove an unhappy experience for all concerned.

### **Computer Software**

Questions have recently emerged concerning the applicability of the copyright law to computer software. There currently appears to be some uncertainty as to the application of all sections of the copyright law to this technology. Nevertheless, copyright can protect a computer program. The laws regarding copying without permission and the concept of fair use undoubtedly apply to computer programs as well as to other copyrightable materials.

Two years ago, Section 117 of the copyright law, entitled "Limitations on Exclusive Rights: Computer Programs," was amended slightly in order to permit the limited "copying" of a computer software program if such was needed in order to use the program. However, the amendment made it clear that copies thus made cannot be sold or otherwise distributed without permission of the copyright owner and must remain with the original licensee.<sup>29</sup> Without a doubt, copyright law will be examined and reexamined in the near future in order to cope with the complexities surrounding the development and use of computer software.

### **Conclusion**

This article has attempted to review those sections of the copyright laws that are most relevant to media librarians for the purpose of creating an awareness of the requirements and privileges which the law affords. The attempt has not been to provide a total review of the law, for to do so would require a much more lengthy exploration. Nor has it been attempted to promote the views of any particular group, whether users or copyright owners.

My career in the educational media industry has taught me that those engaged in the creation of intellectual works and those who use them in academic activities are bound together in a symbiotic manner. We all need each other. We must, therefore, always be cognizant of each other's needs, and copyright law represents a decent compromise of all the interests affected by it.

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# The Use of Audiovisual Resources for Scholarly Research: A Jazz Archive as a Multidiscipline Resource

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MARIE P. GRIFFIN

SINCE THE DAWN OF TIME the human species has recorded its history both visually and aurally. It is probable that the earliest form of communication was the dance—the language of the body. Ritualistic dances marked the milestones in human life (birth, puberty, marriage, and death) and the elements of nature (sun, rain, earth, the starry heavens, the seasons) that made family, and later communal, life possible. Early man recorded these primitive origins of civilization by carving in stone; these visual petroglyphs have been studied by scholars for centuries. The sounds that accompanied the rituals and the movements are preserved for us through the medium of the oral tradition and by relatively recent recordings of societies in which such rituals remain essential to the fabric of the community. The word, the symbol, existed eons before written language on the continuum of time.

Technological developments in the late nineteenth and twentieth centuries have made it possible for the scholar to have access to these primary sources. Photographs and slides of man's artistic creativity from 3000 B.C. to yesterday enable the scholar to study prehistoric Greek vases or the most avant-garde sculptures. Recordings bring us the voices of the past as well as the present, and in the Arctic or the jungle one can listen to the "top" tunes on the *Billboard* charts. The consummate marriage of these media—television—brings the four corners of the

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world into our homes at the flick of a switch. The twentieth century is documented daily in the media.

Scholars have appreciated the value of these primary sources for study and research but only rarely in academia. In colleges and universities, research is generally equated with the study of manuscripts and printed sources. Traditionally, scholars spend many hours analyzing various editions of Shakespeare's plays, seemingly forgetting that, for Shakespeare, an actor, the play itself (the performance) was the thing. Private individuals and commercial manufacturers—in some instances public libraries—recognized the importance of audiovisual resources early in the twentieth century. In academic circles the idea that audiovisual materials represent an essential and primary resource for scholarly research has not yet been fully realized.

Because the development of jazz in the late nineteenth and early twentieth centuries coincided with the improvement and commercialization of audiovisual recording techniques, the examination of a jazz archive as a primary resource for a wide variety of research is particularly appropriate. For jazz, a music characterized by improvisation and the individual interpretations of jazz musicians, the sound recording is indisputably the primary source. Therefore, this paper gives particular emphasis to the research potential of jazz sound recordings as an example of the use of audiovisual materials for scholarly research.

Nowhere are the technological developments, which have revolutionized every facet of our lives, more evident than in the development of the phonograph and the continual improvement of sound recording techniques. The first edition of *From Tin Foil to Stereo: Evolution of the Phonograph*, published in 1950, was expanded in 1976 to describe experimental videorecording, a method of recording both sight and sound on a twelve-inch synthetic foil disc.<sup>1</sup> If this book was updated and reissued today, less than ten years later, it would have to be renamed "From Tin Foil to Digital and The Compact Disc."

Shortly after Thomas A. Edison produced his first tin foil cylinder in 1877, he predicted that the recording of music and preservation of speech and other utterances were among the potential applications for this new invention.<sup>2</sup> Edison's forecasts have today become commonplace. The continual development of audio technology now affects every aspect of our lives. Recorded sound is omnipresent in the work place and in our homes and pervades all recreational activities. It is not surprising, therefore, that sound recording techniques have also revolutionized scholarly research.

## **Field Recordings**

Since the early years of the twentieth century, the importance of sound recordings as historical documents has been recognized. During the 1890s and the early 1900s instantaneous ethnological recordings were made in many countries and among many peoples ranging from the Maoris in Australia to the Arctic Eskimos using battery or treadle-operated acoustical phonographs.

What might be called ethnological incunabula were recorded by composers Bartók and Kodály in Hungary and Eastern Europe and Percy Grainger in England and Scandinavia. Using the Edison wax cylinder phonograph, both Bartók and Grainger independently collected folk songs in 1905, and, apparently unaware of each other's work, published their first findings in 1906.<sup>3</sup> The early Folkways records consisted primarily of field recordings collected by Moses Asch, Harold Courlander, and others in the United States, in Africa, and in many European countries. The archive of folk song at the Library of Congress originated with the field recordings of work songs, prison songs, sea chanteys, and folk tales collected by John Lomax and later by his son Alan Lomax. Although some of the problems of field recording still persist (for example, an ethnologist permitted to record a religious ceremony cannot stop the ceremony if equipment fails or participants move beyond the range of the microphone), the sound recording as oral history is now widely accepted. Today the commercial availability of battery-operated cassette recorders has made it possible for remote villagers in Brazil, ethnic neighborhoods in American communities or local historical societies to record their own oral histories.<sup>4</sup>

Since 1948 when Allan Nevins established the first oral history research program at Columbia University, the number and extent of such projects has increased greatly. Recognizing the potential importance of these recordings as historical documents, government and institutional support for such projects expanded considerably during the 1960s and 1970s. A Foreign Specialist grant provided by the Bureau of Educational and Cultural Affairs of the U.S. Department of State combined with support from the Blues Research and Recording Project and a British Broadcasting Corporation (BBC) midget tape recorder, enabled the well-known blues scholar Paul Oliver to travel in the United States in the summer of 1960 recording blues singers and musicians.<sup>5</sup> These field recordings were featured in the series "Conversation with the Blues" on BBC and later, under the same title, published in both England and America. In his introduction Oliver describes why the music must be heard to be comprehended musically:



for the blues...the recording remains as the only means for common reference, for the subtleties of timing in voice and instrument, of touch and "feel" of the peculiar beauty of crushed notes or slid and twisted guitar strings, of the whine of the bottleneck on an conventionally tuned instrument.<sup>6</sup>

Another example of note is the Jazz Oral History Project, initiated in 1972 by the Jazz Panel of the National Endowment for the Arts (NEA) and administered for a number of years by the Division of Performing Arts of the Smithsonian Institution. This project was transferred to the Institute of Jazz Studies (IJS) of Rutgers University in 1979 with continuing support from the Music Program of NEA. It now includes more than 100 in-depth interviews with jazz artists. Performers interviewed include not only jazz stars—such as Count Basie, Benny Carter, Roy Eldridge, and Charles Mingus—but also many fine musicians who performed primarily as sidemen. Interviews with Sonny Greer and Russell Procope, both members of the Duke Ellington orchestra, reveal many details about the great Duke Ellington himself as well as the experiences shared by the members of the orchestra. An interview with Snub Mosley, who toured with the Alphonse Trent and Claude Hopkins orchestras, illustrates some of the problems the jazz artist faced: "Remember, many times we couldn't sleep in any hotel because the band was black. We wound up sleeping on the bus.... That atmosphere is important to convey to people writing about the history of jazz."<sup>7</sup>

Field recordings and oral histories provide a sense of direct contact with history that is as important to the sociologist, historian, and political scientist as it is to the ethnologist or musicologist. Field recordings are usually documented by the musician or ethnologist doing the research and deposited in a specialized archive, such as the American Folklife Center at the Library of Congress; the Archives of Traditional Music at Indiana University, the Jazz Archive at Tulane University, and the John Edwards Memorial Foundation, now located at the University of North Carolina at Chapel Hill.

### **Commercial Recordings**

Scholarly research using commercial recordings began in the 1930s, primarily as discographical research by talented amateurs. Because for jazz—a music based on improvisation and the unique contributions of individual musicians—the recorded performance is the primary source, much of the early research using commercial recordings was concentrated on jazz music.

Record producers applied different standards to the recording of classical and art music featuring famous performers and to the recording of the popular music of the 1920s much of which was jazz. Recording sessions usually required more than one "take" to ensure that the recorded performance which was finally distributed was the best artistically and technically. As each take was completed, the recording engineer inscribed a matrix and take number in the same wax master on which the sound was recorded, usually in the space between the spindle hole and the played surface. Thus the matrix number uniquely identifies each recorded take. Normally, test pressings were made from each take and the company determined which take would be issued, although Caruso reportedly had the privilege of eliminating any take which he did not find satisfactory. For jazz recordings, companies sometimes issued the same take on several different labels—e.g., for the first-class record shops, for the five-and-ten cent store trade, and "race" records for the Negro market. The name of the performing group was frequently different on each label; a name was selected that would appeal to the market. If a particular recording proved popular and the stamper or other metal parts were in poor condition, another matrix and take number might appear on a subsequent reissue. The purchaser, selecting a record to play on the family Victrola, never knew the difference. Each performer was paid a flat fee for the recording session; there were no royalties in these early years.

Jazz recordings, often featured as dance tunes such as "fox-trot" or "Charleston," were the popular music of the 1920s. Many jazz greats including Louis Armstrong, Sidney Bechet, and Coleman Hawkins, recorded during this early period, but unlike opera stars Enrico Caruso and Madame Schumann-Heink, their names did not appear on the record labels. Jazz buffs in the 1930s collected these early records, and in college dorms and private homes, analyzed these recorded jazz performances. For example, as they listened to the "colored vocal" on the Gennett recording of "Nobody knows the way I feel dis' mornin'," they discovered that Armstrong and Bechet recorded together under the name of the "Red Onion Jazz Babies," accompanying Alberta Hunter, who was listed on this early Gennett session under her sister's name Josephine Beatty.<sup>8</sup> Intensive listening revealed that "Louis' Harlem Stompers" on the Columbia blue label 2615 (matrix number 404569) was not Louis Armstrong at all, but the "Casa Loma Orchestra."<sup>9</sup> They noticed that "Ladd's Black Aces" on a Gennett recording and the "Bostonian Syncopaters" on the Grey Gull label were really the same band—the "Original Memphis Five"—a group whose membership

frequently varied and which sometimes included six rather than five instrumentalists.<sup>10</sup>

Rudi Blesh describes these intensive listening sessions as "the birth of discography." Indeed, it was in 1936 that the first significant discographies were published. Schleman's *Rhythm on Record*, subtitled *A Who's Who and Register of Recorded Dance Music, 1906-1936*, was published in London by the periodical *Melody Maker*<sup>11</sup> and Delaunay published his *Hot Discography* in Paris.<sup>12</sup> Delaunay's classic work is acknowledged as the earliest scholarly approach to jazz music, and successive revisions of this discography in 1938, 1943, and 1948 had a tremendous influence on the development of jazz discography.<sup>13</sup>

Since the late 1950s and early 1960s scholarly research based on commercial recordings has diversified. In a study designed to show that commercial sound recordings can be successfully used as sources of research data, Cathleen Flanagan noted that such studies tended to emphasize specific aspects of performance in the fields of speech, music, and theater, and to a lesser extent they examined recorded poetry and song lyrics as social commentary.<sup>14</sup> Commercial recordings are documented in discographies, in manufacturers' catalogs and listings of new releases such as the *Schwann Record and Tape Guide* and *Bielefelder Katalog*.<sup>15</sup>

### Noncommercial Recordings

Less accessible to the scholar are transcriptions of radio broadcasts, records produced under the V-Disc Program of World War II, unissued recordings such as test pressings, and private recordings including airchecks recorded at home from radio broadcasts. As radio networks expanded, programs for transmission nationwide were recorded by the studios. Early transcriptions of radio broadcasts were usually recorded on 78 rpm, sixteen-inch, glass-base acetate disks and distributed to satellite stations. In some cases commercial recordings were made from these transcriptions. Some eventually came into the hands of private collectors or archives of recorded sound, and others remain in the vaults of the broadcasting companies.

Amateur audio engineers could produce home or concert recordings using the same labor-intensive techniques employed by commercial companies. As early as the 1900-1901 opera season, Lionel Mapleson recorded live Metropolitan Opera performances on Edison wax cylinders, first from a prompting box in the proscenium and later from a catwalk above stage.<sup>16</sup> These cylinders have been reproduced at the Rodgers and Hammerstein Archives of Recorded Sound, New York

Public Library, and will be issued as special premiums by the Metropolitan Opera Guild.

With the advent of the tape recorder, remote broadcasts of performances at clubs or concert halls could be taped off the air even by the amateur. Many of these airchecks have vanished. Some have been issued with permission of the performers and composer. Unscrupulous producers could press records from the tapes in a basement workshop, issue recordings with inaccurate or incomplete (sometimes fictitious) information on the label and the album cover and sell them in competition with commercial recordings.

The V-Disc program was conducted by the Special Services of the U.S. Armed Forces during World War II to provide military personnel overseas with the music they wished to hear. The V-Discs were produced from a variety of sources. In the early stages of the program V-Discs were sometimes made from previously issued popular commercial recordings. As the V-Disc program expanded, many issues were extracted from transcriptions of radio broadcasts, such as the "Moonlight Serenade" programs from CBS Playhouse No. 2, New York City; the NBC "For the Record" series; and Martin Block's "Make Believe Ballroom" program on WNEW. On occasion, movie sound tracks were used. Special V-Disc recording sessions were frequently arranged for the convenience of the artists, often late at night or in the early morning hours. The performers were not paid for these recording sessions. The masters and other metal parts were supposed to have been destroyed at the end of the war; however, many were obtained by private collectors. A set of stampers was deposited at the Library of Congress. Illegal reproductions of the V-Discs, like bootleg copies of airchecks and nightclub performances, have made many of these performances commercially available.

V-Discs are particularly valuable for the scholar. Because the performers were not paid, artists under contract to different record companies could record together under their own names rather than under an alias as they did when they recorded for a company other than the company with which they were under contract. In addition, there was a recording ban from 1941 to approximately 1944 when record producers finally agreed to the demands of James Petrillo of the American Federation of Musicians for better reimbursement and pension funds for the musicians. Therefore, for many performers V-Discs, airchecks, or transcriptions are the only recordings available during this period. Richard Sears's history of discography of V-Discs is a comprehensive reference work covering this era of recorded sound.<sup>17</sup>

## Archival Collections

Like the commercial recordings, many of these more ephemeral recordings, including V-Disc masters, were collected by private individuals. As time progresses many of these extensive and diverse private collections are deposited in institutional archives. This is fortunate for the scholar not only because outstanding collections tend to attract other similar collections but also because institutional collections are usually more accessible than collections in private homes.

An example is the Institute of Jazz Studies at Rutgers University, the foremost collection of jazz and jazz-related materials under university auspices anywhere. The institute was founded in 1952 by Marshall Stearns, a professor of medieval English literature at Hunter College and author of two basic jazz studies, *The Story of Jazz*, and with his wife Jean Stearns, *Jazz Dance*.<sup>18</sup> Stearns and a group of musicians, scholars, critics, collectors, and jazz devotees set up the collection of some 25,000 jazz recordings, books on jazz, clippings, photographs, African instruments, and memorabilia in Stearns's Greenwich Village apartment. In 1966 the board of the institute selected Rutgers University as its permanent academic home, and the collection was transferred to Rutgers in that year (shortly before Stearns's death) with the stipulation that the institute remain autonomous, continue to acquire new materials, and be accessible for research and study.

The IJS collection has continued to grow through donations of jazz releases from record companies, jazz books sent for review from their publishers, and periodical subscriptions; through trading of duplicate items with other archives, and through donations of significant materials from jazz aficionados and such well-known jazz authorities as Nat Hentoff and Leonard Feather as well as the estates of the late George Hoefer, Walter C. Allen, and Charles Edward Smith. The IJS collection now includes more than 75,000 sound recordings (78 rpm, 45 rpm, and 33-1/3 rpm discs, 16-inch transcriptions of radio broadcasts, test pressings, private recordings on disc and tape, and cylinder recordings) and approximately 100 oral history interviews. This recorded sound collection, the very heart of the archive, is augmented by a library of more than 4000 books including essential reference works such as discographies, biodiscographies, dissertations, jazz histories, Afro-American studies, musicological analyses, biographies, and sociological studies; large holdings of jazz periodicals from throughout the world, many of them extremely rare; sheet music, music scores, arrangements, song collections, and transcriptions of jazz solos; a collection of photographs; clipping files dating from the early 1900s; and realia including works of

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art, antique phonographs, and musical instruments. Scholars in many disciplines use the resources of the institute for their research.

### **Musicological Research**

Musicological analyses of jazz music date from 1919. After hearing jazz clarinetist Sidney Bechet, jazz soloist with Will Marion Cook's New York Syncopated Orchestra on its European tour, the eminent Swiss conductor Ernest Ansermet published an essay predicting that the musical innovations inherent in jazz music would form the highway along which the whole world of music would move.<sup>19</sup> By 1936, when the French critic Hugues Panassie published *Hot Jazz: The Guide to Swing Music*,<sup>20</sup> musicologists had ample opportunity to listen to jazz music on record and in live performances in Europe and America.

The major musicological treatises on jazz music, including André Hodeir's *Jazz: Its Evolution and Essence* and Schuller's *Early Jazz: Its Roots and Musical Development*, have based their analyses primarily on recorded jazz performances.<sup>21</sup> Schuller describes the extent to which he relied on jazz sound recordings in his preface:

In fact, this volume has been written on the assumption that virtually every record made, from the advent of jazz recordings through the early 1930s, has been listened to, analyzed, and, if necessary, discussed. A true assessment of an artist (or a particular musical development) cannot be made without reference to the totality of his work and its relation to his contemporaries. An analysis of Beethoven's *Eroica* or Armstrong's *West End Blues* without reference to musical history or the development of musical style could yield a certain amount of factual information, but a full *evaluation* would obviously be impossible without considering the authors' total *oeuvre* and that of their immediate predecessors, contemporaries, and successors.<sup>22</sup>

Both Hodeir's and Schuller's seminal works contain extensive discographies, delineating the *oeuvre* of the jazz musicians covered in these musicological analyses. It is fortunate that the invention and continual improvement of sound recording techniques paralleled the development of jazz music thus assuring that this uniquely Afro-American music has been and will continue to be preserved for enjoyment and research.

### **Visual Resources**

The use of visual resources for research is as old as time and predates the use of print. A pictorial representation of a person, a scene, or an event can be seen, and usually understood, by the average viewer and can

be examined and interpreted by the scholar. One cannot imagine a scholar writing a treatise on Picasso without reference to specific paintings such as "The Three Musicians" and "Guernica," and a discussion of his collages, sculptures, and ceramics. Similarly, we have become so accustomed to the photograph as document that we accept photographic evidence in legal proceedings and record the memorable events of our personal lives in photo albums.

Since the first daguerreotypes were exhibited in Paris in the winter of 1838-1839, scholars and the public have been aware that the photograph reveals more than the photographer sees when taking the picture. Jacob Riis's photographs of the immigrants who lived and worked under wretched conditions in the tenements of lower Manhattan's East Side during the 1880s proved more powerful than his text in his advocacy of legislative reform. Photographic journalism blossomed after World War I in Europe with the publication of pictorial journals such as the *Müncher Illustrierte Zeitung* and in the United States with the initial publication of *Life* and *Look* in 1936.<sup>23</sup>

Accordingly, it is not without precedent that the institute's "jazz-related" collection of photographs is frequently used by scholars both in conjunction with, and in addition to, the sound recordings. Photographs of individual performers or groups of performers are not valuable merely as illustrations. In many instances photographs provide information which cannot be obtained from print sources. For example, photographs of Sidney Bechet onstage as clarinetist in the jazz ensemble and in the chorus line of the 1925 review *Ballets Nègre* in Paris document Bechet's versatility and also provide a graphic portrayal of the performance which featured the American dancer Josephine Baker as well as other American musicians. When the scholar sees an additional photo of Bechet playing his clarinet on the streets of Paris accompanied by a clown and a dancer the flavor of this Parisian experience—the acceptance in Europe of the Black jazz artist as a man and as a musician—is succinctly depicted.<sup>24</sup>

The scholar investigating the music, the art, the history, or the sociology of the 1920s would also be intrigued by the Paul Colin posters which advertised the *Ballets Nègre* and other revues featuring jazz musicians and dancers in the theaters of the Montmartre district of Paris. Colin's posters not only feature musicians, dancers, and instruments as subjects but also reflect the improvisational freedom and the rhythmic propulsion or "swing" or the jazz idiom.<sup>25</sup>

The photograph as document is valuable to the scholar; equally valuable is the photograph as a work of art. When these elements are combined the composite is often a portfolio of incomparable beauty. No

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text is required to supplement the photographic essay on Charlie Parker by Francis Paudras and Chan Parker.<sup>26</sup> Parker's immense capacity to savor life to the fullest—music, women, food, and wine—as well as the self-destructive impulses inherent in his tragic addiction are mirrored there. But the artistry of the photography also evokes Parker's inimitable sound and musical originality.

The scholar seeking to understand Parker's music or the interrelationship of jazz and art might also look closely at the Pharaoh-like statue of Charlie Parker, created by Julie MacDonald, who described the musical and artistic influences that affected Parker's playing: "He listened to Shostakovich, Stravinsky and Bartók, looked at art from Egyptian sculpture to Picasso, with the same intensity; and he remembered!"<sup>27</sup>

The artist Henri Matisse is noted for his experimentation with new media. He invented the technique called *découpage*—drawing with scissors—in which he cut forms out of brilliantly colored sheets and then arranged and combined these until he achieved a harmonious juxtaposition of pure colors.<sup>28</sup> His first portfolio using this technique, which Matisse described as cutting into color as the sculptor carves into stone, was titled *Jazz* and included notes written in his own hand. Of these works he writes:

The images, in vivid and violent tones, have resulted from crystallizations of memories of the circus, popular tales, or of travel. I have added these pages of text to appease the simultaneous reactions of my chromatic and rhythmic improvisations, which constitute a background of sound which carries them, surrounds them and thus protects them in their particularities.<sup>29</sup>

The jazz motif is apparent also in his later works, such as *Creole Dancer*, which represent the full development of the *découpage* technique and achieve the effect of spontaneous use of color and form.<sup>30</sup>

### **Audiovisual Resources**

Scholarly research in dance requires a variety of resources. The tribal and ritualistic origins of dance predate recorded time. However, until the twentieth century when technological developments enabled us to capture moving images on film and sound on recordings, the story of dance could only be traced by studying live performances, memoirs of observers of actual performances, the representations of dancers in arts, and the dance rhythms in music.

The African origins of dance are not only the basis of jazz dance but have been continually reintroduced into American vernacular dance in



the intermingling of Afro-American dance with European, especially Spanish and French, dance. Of the three basic musical orientations—Euro-African, Indo-Arabic, and Sino-Mongolian—harmony is indigenous only in Western music.<sup>31</sup> In Spain, European music and dance forms were modified by Arabic influences, which extended from the Middle East along the shores of the Mediterranean, and the African traditions which dominated Spanish culture during the years 711-1492 of the Moorish conquest.

Louisiana was discovered by the Spaniards and colonized by the French, but during the eighteenth century was both a Spanish and French colony. In addition, during the latter half of the eighteenth century, there was a vast influx of slaves from the French and Spanish islands of the Caribbean. In New Orleans, the port city of Louisiana, these cultural traditions merged and are reflected in compositions, such as Louis Moreau Gottschalk's "La Bamboula, Dance Nègre, op. 2," which is based on the African rhythms exhibited by dancers at the Place Congo in the 1840s,<sup>32</sup> and the Creole-flavored "New Orleans Blues," by Jelly Roll Morton who, by his own account, invented jazz by introducing swinging syncopation and improvisation to ragtime, as early as 1902.<sup>33</sup>

The merging of African and Spanish-African elements continues in the twentieth century. "Caravan" composed by Puerto Rican Juan Tizol, trombonist in the Ellington orchestra, was introduced in 1937 and became a standard in the Ellington repertoire. Afro-Cuban and West Indian music and dance were popularized by Machito, Tito Rivero, and other Latin Americans who formed their own bands. The dance repertoire which began with the cakewalk, the strut, and the Charleston expanded to include the rumba, the mambo, the meringue, and, from Brazil in the 1960s, the bossa nova and the samba.

The essential elements in African dance can be studied in films of African dancing in South Africa, Ghana, and Nigeria and in their counterparts in the Afro-American vernacular, such as the cakewalk, shuffle, the strut, the chicken, and the Watusi. A list of films and kinescopes, dating from 1894 to 1966, is included in *Jazz Dance*.<sup>34</sup> Listed in this compilation are feature-length films, short subjects, newsreels, cartoons, documentaries, and films made for television. David Meeker's *Jazz in the Movies* covers the period 1917-1977.<sup>35</sup> Many of the more than 2000 films annotated in this listing—which features jazz artists as performers or studio musicians—contain dance sequences. Photographs of dancers are also an important visual resource. The dance archives of the New York Public Library at Lincoln Center have an outstanding collection of dance photographs. For jazz dancers the IJS photograph files,

which include photographs of dancers such as Leon James, Honi Coles, and the Lindy Hoppers, are very valuable. Sound recordings of tap dancing add a unique dimension to the study of both jazz dance and dance music. Bunny Briggs's tap solo, "David Danced Before the Lord With All His Might," performed to the accompaniment of Duke Ellington's "Come Sunday" theme from *Black, Brown and Beige* can be heard on Duke Ellington's *Concert of Sacred Music* (Victor LPM 3582) recorded at Fifth Avenue Presbyterian Church, New York City, and on an album *My People* (Contact LP CMI) recorded from a show written by Ellington and produced in Chicago.<sup>36</sup>

### **Social Science Research**

The story of jazz, as revealed in the music, the arts, and literature is a fertile field for scholarly research in the social sciences. Jazz is the story of African slaves forced to dance on the long voyage to America. The African roots of jazz—polyrhythmic and asymmetrical percussion, open tonality, the pentatonic scale, the call-and-response pattern—are echoed in the field hollers and spirituals which were the Negroes' response to the trials of slavery in an alien land. Jazz sings the blues while the blue notes continue to resound from the cotton fields, the fish fries, and the levees to the tent shows, honky-tonks, and the urban ghetto. Jazz blossomed in New Orleans with funeral parades of brass bands, dancing the French quadrille, Spanish and Creole traditions, and ragtime pianos in Storyville. Jazz played the riverboats on the Mississippi, taking jazz upstream to Memphis, St. Louis, Kansas City, and Chicago. Jazz combos in dance halls, speakeasies, and night clubs; and the hot swing bands—Count Basie, Benny Goodman, Duke Ellington—carried the jitterbug and the Lindy from New York City to London, Paris, the Nile, and Tokyo. Burdened with slavery's legacy of prejudice and discrimination, jazz musicians poured forth their improvisations in hotels where they frequently could not eat or sleep, sometimes in towns where they could not walk the streets. Jazz was applauded in concerts at Carnegie Hall in New York City and at festivals in Newport, Rhode Island, Montreux, Switzerland; jazz greats were invited to the White House; and in England jazz stars played for royalty.

This story can only be fully documented by consulting audiovisual materials. To understand how these events affected the thoughts and actions of individual men and women—the very essence of history—we must consult a medium which reveals the innermost feelings of those—black, white, and mulatto—who lived with these experiences. Literature and poetry crystallize these moments so that we can comprehend

the depth and breadth of these feelings. We can read Langston Hughes's jazz-inspired depiction of "The Weary Blues":

Down on Lenox Avenue the other night  
By the pale dull pallor of an old gas light  
    He did a lazy sway...  
    He did a lazy sway...  
To the tune o' those Weary Blues.  
With his ebony hands on each ivory key  
He made that poor piano moan with melody.  
    O Blues!  
Swaying to and fro on his rickety stool  
He played that sad raggy tune like a musical fool.  
    Sweet Blues!  
Coming from a black man's soul  
    O Blues!<sup>37</sup>

Poetry, however, is essentially an aural medium. When a poem is read the timbre of the open vowel sounds and the inflections of pitch and tone engender an emotional as well as an intellectual response. As we listen, we—like the poet—get an inkling of what that black piano player felt as he poured forth his soul in the blues.

When the poem is set to music this response is intensified. Before a note is sung the instrumental introduction sets the scene, establishes the mood, and involves the listener. When a jazz singer like Billie Holiday, who used her voice like an instrument and paraphrased the melody in the classical jazz tradition of the inimitable Louis Armstrong, begins her vocal solo, the musical expression intensifies the meaning. The effect is similar to the magnification of sound from mono to stereo to quadraphonic.

As an example, we can listen to Billie's recording of "Strange Fruit," a poem by Lewis Allan, set to music by Billie Holiday and Sonny White and dedicated to Billie's father who, when stricken with pneumonia, was refused admittance to any Dallas hospital and died in the Jim Crow ward of a veteran's hospital. This was first recorded 20 April 1939 at Café Society Downtown, a nightclub in Greenwich Village, New York City, by Commodore Records (Commodore XFL-14428). Standing in the spotlight, gardenia in her hair, Billie commences her solo:

Southern trees bear a strange fruit,  
Blood on the leaves and blood at the root,  
Black bodies swinging in the southern breeze;  
Strange fruit hanging from the poplar trees.

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By the time she reaches the searing climax, "Here is a strange, and bit-ter-crop," the clinking of glasses and whispered conversations are stilled. Mere words cannot describe this performance—an impassioned plea for racial justice in America. As recorded, it is a piercing cry expressing the anguish of all men everywhere who suffer man's inhumanity to man.

### **Epilogue**

It is difficult, indeed, to follow Billie Holiday's consummate performance. Nonetheless, it may be valuable to come full-circle, as it were, and return to the basic premise of this paper—i.e., that audiovisual resources represent a primary source for a broad variety of scholarly research. An entire issue might be devoted to the multiplicity of resources available in the film archives and the audiovisual centers in this country and abroad. This investigation, however, has focused on just some of the many facets of scholarly research which are pursued in a specialized, primarily audio, archive and can be aptly termed a case study. If, as a result, in college or university libraries academic librarians are alerted to the importance of adding a discography, a filmography, or a list of audiovisual resources to the bibliographies, routinely and conscientiously prepared, the scholarly community will surely benefit by gaining access to the undisputed fact of the recorded event.

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# Nonprint Materials: A Definition and Some Practical Considerations on Their Maintenance

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THOMAS B. WALL

NEW IDEAS ABOUT LIBRARIANSHIP are important for a number of reasons. We have entered an era in which information has a tremendous bearing on the evolution of our society, and in which the library as a traditional information source has been challenged by new information providers. Technology has been directed to meet the information needs of society, methods have been developed for storing astronomical amounts of information in relatively small spaces, and information often can be retrieved almost instantaneously.

At issue in all this is the fundamental role of the library, since libraries, as social institutions, cannot remain unaffected by change. This is particularly the case with the emergent information technologies which challenge libraries to respond to technological change. A number of prominent library theorists have offered their own observations on this subject, observations that are as divergent as they are important.<sup>1</sup>

If we are to assess the library profession's response to technological innovation, we must include the role of nonprint collections in the overall picture. While there certainly has been an agreement in principle that information comes in a variety of forms, most libraries (especially academic libraries) have in practice done a poor job of handling nonprint materials. That little attention has been given to the conservation and preservation of media materials, in fact, typifies the basic neglect of nonprint materials themselves.

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## Nonprint Materials

In defining what constitutes a nonprint collection, it is important to distinguish among three words commonly attached to such materials—*media*, *nonbook*, and *nonprint*. Pointing out the various nuances of each term will facilitate a broader understanding of nonprint librarianship and how it is affected by the new information technologies.

*Media* is perhaps the most elusive of these. On the one hand, a medium is a liaison in which communication is transmitted from a sender to a receiver. Thus, language can function as a medium just as well as can tape recorders and microcomputers. However, media is also a term which applies to materials. Media materials are commonly considered to be those items through which a library user can access various types of information. Some of these materials (e.g., a record player) are unilateral insofar as the user is only a receiver. Others, a database for example, permit patron interaction. In each case the medium functions as a "middle ground" to the message. Within the larger communication spectrum, a third usage is often given to media—that is, "the Media." Our customary use of the term to describe the various mass communication channels illustrates how difficult it is to pin down a solid definition for media.

As with *media*, the terms *nonbook* and *nonprint* are problematic. On a basic level, both can be considered as species of the genus *media*. Yet *media*, as we have seen, is simply too broad an expression. *Nonbook* and *nonprint* must be differentiated with respect to their peculiar structure. There are two options in this regard. On the one hand all materials which are not paper (i.e., *nonbook*) may be placed in a special collection. This would include databases, microcomputers, microfilm, videocassettes, and records. This is not a *nonprint* collection but a *nonbook* collection. This solution is sufficient to the extent that it is useful to define the collection simply from a technical standpoint.

A second option seems more promising since it takes into account the types of media information and their relationship to the specific interests of users. *Nonprint* items would here satisfy a three-fold definition that at the same time separates them from *nonbook* materials in general. A *nonprint* collection then is distinguished from the purely technical information provision of *nonbook* in that it includes an *aesthetic* aspect. This is not to deny that videocassettes are helpful in conveying technical information (in their *nonbook* capacity), but merely to suggest that their aesthetic quality also qualifies them as *nonprint*.

## *Nonprint Materials*

What then is required for an item to be nonprint? As a matter of expediency and at the risk of being arbitrary, I propose here a threefold definition of a nonprint item:

1. The item must appeal to the sight and/or hearing of the library user.
2. Under normal conditions, the item must require additional equipment for usage.
3. The printed word must not represent the essence of the medium.

These three criteria are meant to establish the guidelines or parameters of a nonprint collection. Specific examples of materials meeting the criteria include videotapes, films, audiotapes, slides, transparencies, and filmstrips. While other formats may also fit this definition, the following discussion concerning conservation, preservation, and security will deal mainly with these materials. *Security* and *preservation* describe ways of keeping items from being stolen or vandalized and of preventing materials from deteriorating due to neglect. The two terms can be seen as interrelated. Security has to do with storage—that is, safeguarding materials and circulation. Conservation is also concerned with storage but here emphasis is on environmental considerations and proper handling. Both security and preservation seek to increase the longevity and enhance the care of library materials.

### **Conservation: Basic Considerations**

With respect to conservation, it is widely agreed that the most important factor is environmental control. As noted by Robert H. Patterson, “the physical environment in which materials are housed is the single most important factor for conservation.”<sup>2</sup>

When dealing with many media formats, no single temperature can be prescribed. Yet for the media being considered here, an approximate range can be established. Among the various authorities consulted, the highest temperature recommended for media formats was 75°F for videocassettes. This was defined as “room temperature” and also recommended for videotape.<sup>3</sup> Lower estimates ranged around 60-65°F. Magnetic tape, for instance, is given a range of 65-68°F,<sup>4</sup> while floppy disks can accommodate temperatures between 50° and 125°F. For the latter, however, the two extremes are not encouraged. Ideally then the temperature should be somewhere between 60° and 70°F, with 65°F the optimum for both humans and equipment.<sup>5</sup>

Whatever temperature is decided upon, it is important that it remain as constant as possible. Any fluctuation of more than a few degrees can harm materials. For this reason care should be taken in

deciding where to place the collection. Doorways, vents, and windows should be avoided. Location is not only important for temperature, but also for other environmental concerns. In all cases stability is crucial.

The temperatures already given were recommended particularly for materials that are actively being used in a library or information center. For an archival collection, however, the temperature range drops by about 10°F.<sup>6</sup> When materials are removed from long storage or when items are subjected to temperature fluctuations of more than a few degrees, they should not be used immediately. A process of "staging" is required which enables the displaced item to adjust to the new temperature. What this essentially means is that an item should be permitted gradually to reach temperature and other environmental conditions of the area in which it will be used.

Just as nonprint materials are sensitive to temperature, so they are to relative humidity. Again, there is no single relative humidity prescribed for all materials. However, a range of 45 percent  $\pm$  5 percent seems best in general with 47 percent as the optimum relative humidity. As relative humidity increases, metal items develop a propensity to rust and tapes become abrasive and cause excessive head wear.<sup>7</sup>

As *humidity* increases, films develop mold and fungus with increased potential for layer adhesion. In the extreme case the emulsion (picture) will peel off the film backing. As humidity decreases, film bases curl and become increasingly brittle.<sup>8</sup>

As with temperature, consistency is important and the relative humidity level for archival storage should be lower. If necessary, humidifiers or dehumidifiers should be employed to stabilize relative humidity levels. These temperature and relative humidity criteria also apply to equipment.

Dust control presents more of a problem. While no environment is completely dust-free, measures can be taken to minimize the effect. Air conditioning units with filtration systems are beneficial since they help clear the air of dust and other foreign substances. The location of the collection is an important consideration. By positioning both equipment and materials away from openings and vents, dust is less likely to have an adverse effect on the collection.

A final environmental consideration concerns sunlight and excessive fluorescent lighting, which can be extremely damaging to all types of materials. Slides, for example, will turn dull and brown or yellow when exposed to too much light. A floppy disk or a phonograph record left on the dashboard of a car will become useless. It is clear then that storage should not be near windows if at all possible. Not only are

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windows potentially damaging in terms of light, but also they are a source of heat and condensation.<sup>9</sup> If materials must be housed near a window, the window should be tinted in a way that filters out the ultraviolet rays of the sun. Curtains are also an option although they might be opened by someone not aware of their purpose.

Although environmental concerns (such as light exposure and relative temperature and humidity) are extremely important, other factors are significant. The first of these relates to magnetic fields. Many nonprint materials are put on magnetic tape or housed in electromagnetic storage devices. As such these media are highly sensitive to any magnets and electrical motors. Consequently, these materials should not be housed or used near such fields. Gerald Gibson notes that, "the principal problem[s] associated with magnetic recordings are undesired erasing of the magnetic signal, separation of the emulsion from the base material, print through, and tape breakage."<sup>10</sup> Abbott and Salesi point out that, "audio and visual tapes placed within any magnetic field will either be erased or develop static."<sup>11</sup>

Most magnetic tapes have their own containers, as with audio-and videocassettes. While these containers can greatly reduce dust and sunlight damage, the problem of magnetism additionally requires that storage location be in an area free of magnetic fields. Storage shelves made of wood and/or nonmagnetic metal, free from vibration and shock are good options.<sup>12</sup> Storage racks should be electrically grounded. Also, if there are any other electronic fixtures or power lines in the area, a distance of at least two feet should be maintained between these and the items.<sup>13</sup> In addition, as Abbott and Salesi point out, there is a hardware/software distinction:

most pieces of equipment found in a (media) center have either speakers or motors [magnetic materials] (and) the media materials should be separated from the hardware except during use.<sup>14</sup>

Another factor to keep in mind when storing media materials is their positioning. It is widely agreed that all materials should be stored in a vertical position. Vertical storage will prevent warping of phonograph records and help protect tapes and film which can be damaged by the excess weight on their edges when laid horizontally.<sup>15</sup> Slides and photographs are also best stored vertically.

As with temperature and relative humidity controls, avoiding sources of magnetism and using vertical storage are not enough for proper preservation. Individual containers and storage cabinets are also important considerations especially for slides and prints. Photographs can be stored in various ways. Acid-free envelopes are a viable method as

are plastics. Plastics resist moisture and will not grow misty with age. Again sunlight is a key factor and interleaved acid-free black paper can help protect items from excessive light.<sup>16</sup> Cellulose acetate is commonly used as an interweaving material and functions effectively as a holder for prints. In addition, acetate sleeves can be employed for prints and negatives.<sup>17</sup> While sunlight is one of the major conservation concerns for photographs, moisture is also a serious problem. Fungi can form on photographic materials when the relative humidity factor gets near 60 percent.

Cabinets are useful for housing slides, prints, and negatives; along with other nonprint items. For photographic materials, "the cabinet should be made of steel, and its finish should be of baked enamel—the pernicious effects of the paint's resins and peroxide are eliminated by the baking process."<sup>18</sup> In all instances cabinet design should afford easy access and filing systems should be conducive for user entry.

As noted in the original definition of the nonprint item, further equipment is usually needed. In this case the software item—i.e., the nonprint item—is susceptible to damage from improperly maintained hardware. With magnetic tapes the tape players should have their heads cleaned and checked regularly thereby preventing static and minimizing scratching of the tape. Magnetic tape media as with "other members of the 'Picture' family, require direct contact of equipment and carrier in order to make data human readable and retrievable."<sup>19</sup> Yet the "picture family" is by no means exclusive. In addition, the same considerations apply to audiocassettes (or any other magnetic tape media).

Phonograph records make contact with the stylus of the player, of course, and if at all possible a quality stylus should be procured. "The most common extrinsic factor in disc deterioration is the dirty, or worn stylus."<sup>20</sup> The diamond stylus is expensive but is considered by some to be worth its cost in relation to its preservation value. An emerging way of "reading" phonograph records uses lasers. With laser discs there is no surface contact. However, laser technology is still rather new and quite expensive. The hope is that in the near future, libraries will be able to afford what the new technologies have to offer.

Despite the new technology, however, there is still a serious question surrounding the proper handling of materials. The human element is still the principal cause of material damage.

Handling involves both the user and the librarian. This means that the librarian first must know the procedures before educating the user on proper handling of equipment. In addition, if items circulate, patrons will be responsible for their care. Yet even if maintenance brochures are included with the materials, it is never certain that the

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patron will read them. Also, since most nonprint items require additional equipment, proper handling extends to software and hardware.

The relation between user services and conservation is central and difficult. It is a somewhat paradoxical situation: The purpose of the library is to provide maximum services to a specific clientele, yet if loaning some items means their usefulness will be foreshortened, what can be done? Neither aspect of the paradox can stand alone and the dilemma is complicated by security considerations.

### **Security: Basic Considerations**

The problem of security for nonprint items has received little attention in the professional literature yet the problem remains a serious one. A good place to begin examining security measures is with the storage of materials, because storage methods have bearing on conservation and security. Establishing where media are housed in the library and providing policies and equipment on monitoring and stabilizing temperature and humidity does not necessarily mean that collection security has been assured.

Insofar as conservation has been considered when deciding upon storage procedures, security concerns should also figure in the process. Housing materials is an in-house operation. Storage implies keeping the materials in the library. Therefore, considerations here are primarily geared toward keeping materials so that they cannot be accessed or used without some assistance from a staff member. This is a basic difference between book and nonbook access. For books, the card catalog points to the appropriate location and the patron can go directly to it. With nonbook formats, however, giving the location of software will not suffice in many cases. A distinct nonprint access policy is made necessary by the limited availability of machines, the sensitivity of both the item and the equipment, and the incompatibility with nonprint media formats of electronic detection devices used for books. Measures should be taken that provide for the security of materials when the library is open but few staff are present. In "open stacks" media collections this could mean equipping fire doors with panic bars and door alarms. In "closed stacks" media collections, this could include a separate room or closet which may be locked. Cabinets and drawers housing materials in "closed stacks" also should have good locks.

Both conservation and security requirements should be considered when deciding how and where media will be housed, but proper housing of materials does not by itself resolve the problem of securing nonprint items. While the collection should be accessible, it also is

important that it remain intact. Lamentable though it be, people do steal and a nonprint collection requires consistent monitoring. Monitoring a collection to reduce and prevent theft, however, does not mean that the library needs a fortress for its nonprint collection. A library exists to serve its users, and consequently the collection should be as accessible as possible.

A technical problem underlying the need to monitor concerns "magnetism." Juxtaposition with other magnetic fields will erase or garble a floppy disk, an audio- or videocassette, and other nonprint items that are carried on electromagnetic media. Security systems used in most libraries operate by electronically detecting magnetized strips that have been inserted in library materials. If someone attempts to leave a library with a book that has not been "desensitized," an alarm will sound. However, if the same magnetic strip were placed on a video or audiocassette, "desensitizing" the strip would also erase or garble the tape. Thus an open stacks policy would permit anyone to walk out with cassette, or it would require setting up circulation and theft detection procedures requiring that media materials be inspected by staff members posted at the exits, and media would bypass the electronic security system after inspection. There is no library theft detection system available at this time that protects nonprint materials carried in electromagnetic media.<sup>21</sup>

A related problem concerns the difficulty of placing a "strip" or "target" of some kind on the item itself. If a system were developed that accounted for magnetism and used some other means of detecting a material that had not been checked out, there still would remain the problem of marking the item in such a way that patrons could not tell where or how the detection system works. With books, the "strip" can be hidden in the spine or even between pages as with periodicals. But where would a strip or target go on a videocassette? On the casing?

Surely not, for the casing can be removed from the item. The same holds for floppy disks.

In short, most nonprint items are not conducive to the security measures that are applied to books. The incompatibility of book and nonbook security considerations suggests that security for nonprint collections requires a solution that is idiosyncratic to the particular library. Applying the technology suitable for book security will not do. Nonprint security necessitates a more comprehensive approach that accounts for the collection on its own terms—i.e., measures sensitive both to the user and purpose of the collection. Security in this sense is not a technical problem so much as it is a human problem requiring rational judgment.

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### **Circulation Policy and Security**

In order to arrive at a common ground between security and service, a circulation policy has to be developed that takes both into account. The fundamental consideration in any circulation policy is whether or not items will be permitted to leave the library. Decisions concerning this aspect are further influenced by the facilities available in the library, the size and purpose of the collection, and the extent to which patrons can be expected to return the item. In addition, any policy is affected by the size of the staff and the availability of the collection (i.e., the number of hours the collection is open). Some policies may allow some items to circulate outside the library while only allowing in-house use of other formats.

There is no absolute criteria to which a librarian can refer in developing a policy, nor do any of the factors previously outlined preclude a decision by the librarian to make an exception. Yet an examination of these factors may shed light on some of the underlying considerations in formulating a policy that reflects both patrons need and collection security.

Presumably the media collection in an academic library has been developed with the curriculum in mind, and the community of users has a genuine need for the material. The need consideration is the frequency of use in relation to the equipment available in the library. If consistently there is a line waiting to use the videocassette players, for example, it should be decided that either more videocassette players are needed or perhaps that videocassettes should be allowed to circulate. But the solution is not simply a case *x* or *y*. Financial considerations limit the decision to buy more playback equipment; whereas user education, classroom usage priority, and patron honesty affect the decision to allow media to circulate.

A strict in-house circulation policy has certain built-in advantages. For one, the patron is using the material on equipment that is familiar to the library staff. If a problem should arise, the library staff can confront it when it occurs. For instance, if a videocassette is caught in a machine, a library staff member who knows how to use the equipment likely will cause less damage in extracting the cassette than would the novice. Requiring users to leave their university "ID" cards at the desk before being given the media they want to use further insures that nonprint items will not leave the building. In-house use places the librarian in the role of informal educator, showing patrons how to use the equipment and helping users discover various information formats as the need arises.



In universities where nonprint materials frequently are used as teaching aids, it is important to have materials on hand. When educational media collections are up-to-date and have been selected in response to curriculum needs, staff in the library's nonprint division may be quite busy, arranging classroom use of materials. When the same items are permitted to leave the library their value in the classroom is in limbo. Even honest patrons—and most are—are not immune to accidental loss. Here security measures are not sufficient. As soon as the item is checked out it is the patron's responsibility to see to it that it is returned intact and in good condition. But what if the item is lost or damaged beyond repair? The library is reimbursed for the item, but that does not help the professor who wanted to use it in class. As a result the class suffers and the nonprint service is undermined by circumstances that it did not create but for which it is nonetheless responsible.

Within the context of the academic library, policy makers must remember that the purpose of the library is to provide information services which uphold the educational standards of the institution. In this sense, classroom use and reserve items for class assignments have priority over the desires of individuals. Here the security task is to insure that the materials are in the collection when needed. Yet circulation policy should not necessarily be subordinate to security measures and budgetary considerations. It is easy to envision a scenario which includes effective security measures for protection of valuable items that at the same time alienate the library's clientele. Such a policy, of course, defeats the purpose of the library. The in-house policy, then, cannot be applied in a strict sense. What is needed is a set of borrowing procedures that provides a degree of latitude with respect to the character of the collection. In making judgments about which formats can circulate and which cannot, the librarian must take into account many factors including value of the item, demand, and security considerations.

## Conclusion

Conservation introduces certain considerations related to storage. Where and how materials are housed also has ramifications for security. Likewise, both security and conservation are concerned with protection. Conservation measures are designed to protect the materials from "natural" erosion. Security focuses on protection against human problems such as theft and vandalism.

Circulation is central to security because materials must first be in hand to be stolen or vandalized. The problem of not having an adequate technical answer to the security of magnetic materials introduced a

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dilemma of the accessibility of materials. Circulation policy is also of crucial importance because it points back to the library patron. This "pointing back" includes reassessing the basic principle of libraries as user-oriented. Where a circulation policy is entirely ruled by security or conservation concerns, it can be considered to be out of character with this basic principle. However, circulation policy cannot be precluded from discussion surrounding the development of security and preservation.

Nonprint collections have many distinctive features that separate them from book collections. The recognition of these particularities is borne out when a comprehensive approach is employed by a practicing librarian. Questions include the structure of the materials, the possibility of their emergence as both information and art, and their interrelatedness with traditional library areas (e.g., security, conservation). It is this latter aspect that needs more attention, especially security concerns. As these questions are approached from a comprehensive perspective by a practicing librarian, theory meets practice. It is this approach, I feel, that is an incumbent responsibility for librarians in a highly volatile era of the profession. If we ourselves cannot account for and question the conditions of our place in society and history, we run the risk of becoming anachronistic. Where we have the courage to examine critically our relevance we will establish a firm foundation for applying our skills.

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# Interactive Technologies in the Academic Library

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PETER H. WAGSCHAL

AS WE APPROACH the middle of the decade, there seems little room for doubt that interactive electronic technologies are emerging as the single most dominant force in reshaping our daily lives. While this penetration of "chip" technologies is proceeding more slowly than some of the more ambitious forecasters had anticipated, it has already gone far enough to make it clear that the shape of things to come will be determined in large measure by the manner in which we choose to computerize America.

The irony—and the challenge—is that, as technological developments in the computer realm proceed with a whirlwind pace, most public institutions are finding it difficult, if not impossible, to cope with the choices that these new tools force upon them. While the business environment rushes to take advantage of the productivity-enhancing features of interactive electronic technologies, a variety of institutions in the public sector—most notably schools, libraries, and social service agencies—find themselves bewildered by the numerous possibilities and reluctant to enter a territory which is so rapidly evolving and so unpredictable in its overall direction.

For America's library system as a whole, and its academic libraries in particular, developments in interactive electronic technologies force a set of choices and dilemmas which will be as crucial in their results as they are difficult in their resolution. As more homes are equipped with

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computers that can be networked to large databases, one might argue that the fundamental purposes of academic libraries—as storehouses of the most up-to-date information—are being replaced by a more convenient and universally-accessible information system. On the other hand, the driving force behind such developments is grounded in the profit motive, and there is every reason to believe that the commercial interests which are developing these databases could radically alter the shape, content, and operating principles of information access. As academic libraries struggle with these new technologies, it is crucial that they place themselves in a knowledgeable position from which they can have impact on the dimensions of the information storage and retrieval systems of the future.

### On the Inevitability of Interactive Electronics

To say that technological developments have played a major role in shaping the course of human life on this planet is to belabor the obvious. From the taming of fire to the widespread use of the wheel, barbed wire, the automobile, or the television set, human history is as much an account of our inventions as a chronicle of their unanticipated effects upon our daily lives. And while the pace of such technological development has clearly hastened in this century, our ability to foresee the shape of new technologies or their likely effects on us has remained primeval.

Now, as the twentieth century winds to a close, there emerges a new set of technologies which bears all the marks of being the successor to television in its widespread impact on all facets of American life. While others would describe these times as the dawn of the "Computer Revolution," my preference is to describe the phenomenon as a "Chip Revolution," a shorthand way of referring to all manner of *interactive electronic technologies* based on silicon chips. The word *computer*, after all, has connotations which limit our thinking either to large machines of the *Space Odyssey* kind, or to visions of the current shape of personal home, desktop, lap-size, or "micro" computers which are likely to change rapidly as the chip revolution speeds up.

Whatever term one uses to describe the current dynamics of the chip revolution, there is an inevitability to its progress that is crucial for all of us to understand. For those who purchased calculators twenty years ago, the basis for that inevitability is firmly embedded in our empty wallets, for the calculator—and its startling drop in price over the last two decades—is the model for future developments in all chip technologies. Unlike any other technology that has emerged over the past fifty years,

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chip products embody the age-old economic conception of “economies of scale” with a vengeance.

As was the case with calculators—which now have production costs somewhere in the neighborhood of three cents apiece—chip technologies of the present and future begin with a large capital investment required to produce the first chip that performs whatever new function a manufacturer has in mind. Once that first chip has been invented and perfected, however, the process of mass producing duplicates is not only easy, it is exceptionally inexpensive. The story of the chip revolution—past, present, and future—is written in this basic structural economic factor. Chips will infiltrate every nook and cranny of American life precisely because there are enormous profits to be made in developing and marketing them.

Over the coming twenty and thirty years, virtually every product currently on the market, and a wide range of new ones, will see the incorporation of some aspect of “interactivity” through the use of electronic chips, and the driving force behind all such developments—from hand-held games to electronic maps in our cars to mainframe computers in the workplace—will be the same as the economies of scale that led so many to buy calculators. As more and more become interested in any particular piece of interactive electronics, the price of that item can be reduced drastically so that even more are tempted to buy it.

The dazzling variety of such products already on the market is enough to give one pause without even having to speculate about possible future inventions:

- The “Eye-identifier” currently used by some banks as a security system. This device allows entry only to people whose retinal image (as unique as a fingerprint) matches a previously-stored image. If prices drop as rapidly as those for calculators did, we’ll all be using them in five years instead of front door locks.
- General Motors plans to have an option on its automobiles soon which provides an electronic map of any place in America which shows (via Landsat satellites) the vehicle’s current position, and plots the easiest route to anywhere else.
- Academics already can access, through telephone lines and a home computer, more up-to-date information on virtually any topic than is available through most small- to medium-sized academic libraries. National networks like The Source, CompuServe, BRS/BRKTHRU, Knowledge Index—to mention only a few—provide rapid access to bibliographic and full-text information on general and specialized aspects of many topics.
- Voice-identification is already getting fairly sophisticated, with IBM

and several other smaller companies already marketing devices which can recognize as many as 500 words spoken plainly by almost anyone.

- The current versions of many ovens include chips which take the cook through the entire cooking process, from recipe to cooking times to completed meal.
- Seiko already markets a watch/computer with a detachable keyboard and modem so that it can be used to connect with any of the currently-available national databases via telephone. And ITT is hard at work on the computer/watch which will connect to the world of voice and data transmission through satellite from any place on the planet.

As more such chip-based technologies emerge over the coming decades, it becomes increasingly impossible to imagine an American home which does not make substantial use of interactive electronics. While it may be possible for many to get along without a "computer" in 1990, it is hardly possible to see our homes—not to mention our workplaces and sources of entertainment—without a variety of chip-based products by the turn of the decade.

### Interactive Television

While the kinds of chip-based products previously described may appear trivial, they represent the kind of full-scale invasion of the minutia of our daily lives that will become commonplace over the coming decades. More important however, chips—for the kinds of economic reasons already discussed—will make major changes in the kinds of entertainment and education available in homes. In particular, chip technologies will play a major role in making the television experience an *interactive* process.

Imagine such a system at the most expensive end of the spectrum of interactive television. It includes a large-screen television with a touch-sensitive screen, a home computer, a videodisc player, the most sophisticated voice-recognition device, and currently available software:

- You sit down in front of your interactive television and say, "Aspen, please," and the screen shows you Main Street in downtown Aspen, Colorado. If you say "Faster," you move down Main Street faster. If you say, "Turn right," you turn right at the next street. When you say, "Stop," the image freezes, let us say at the door to the Aspen Hotel. When you touch the door (on your television screen) you are taken inside the hotel, where you can inquire regarding room prices

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or see the penthouse suite, or look at the dining room menu, or make reservations.

- Tiring of your travels through Aspen, you might ask your interactive television set for its “calculator” which will allow you to do your income taxes on the screen, or for its “telephone” which enables you to place a phone call. Or you might tell your set that you want to see *Hamlet*, in which case it might respond with, “Would you like Richard Burton or Richard Chamberlain as Hamlet?” Or it might ask where you want to start in the play or whether you would like to play the leading role yourself and have it perform the rest of the play around you.
- At this point you might hunger for instruction on some topic of your choice—anything from beginning Spanish to advanced differential calculus—and by request from your interactive television set pick up on your studies right where you had left off. Your interactive television will be a patient, individualized tutor, capable of using the full range of instructional styles (e.g., drill-and-practice, tutorial, simulation) and utilizing video images as models and examples of the lessons it teaches.

Fantasyland? One would be tempted to think so, except for the fact that systems like those described have been in operation for over five years and are being used in a variety of industrial and military settings in training programs.

As chip technologies continue to develop, to decline in price, to fill the nooks and crannies of our day-to-day lives, to provide more and more information stored in ever-smaller amounts of space, and to connect us to still larger computer systems which provide access to still more information, they hold the threat and the promise of drastically revising our conceptions of what it is to live a normal life. The inevitability of these transformations can, I would argue, no longer be avoided. But while we are in no position to put a halt to the chip revolution, we *are* in the early stages of a process which can move in any of a variety of ways.

In attempting to come to grips with the choices—the major questions of *how* America computerizes itself—it is fruitful to look more carefully at another technology which transformed our lives—television.

### **Television as a Counter-Example**

In 1946, there were less than 7000 television sets in America. By 1956, over 85 percent of American households had at least one television



set, and by 1978 there were more television sets in America than bathtubs, a fact which led many to wonder which is washed more frequently, brains or bodies. For at least the past twenty years, Americans have watched, on average, four to six hours of passive television every day, 365 days a year. In the past forty years, America has gone from a nation which watched no television whatsoever, to a country in which television watching is the second most frequent activity—after sleep.

Television has become the common coinage, language, and ideology-vendor of the times. Since it occupies so much time, its impact on what we do, feel, think, and value is central. Even though there is no clear idea of what all of this television-watching is doing to us as individuals or as a nation, there are enough studies of the relationship between passive television watching and day-to-day life that it is becoming commonplace to think that television puts power and influence in the hands of a very few.

Because we spend so much time in front of the tube, we have no small tendency to credit its images with more reality than they deserve. And while it is true that everyone knows more about more things, people, and places than they ever could without television, it is also true that relying unquestioningly on the television image does not help develop critical thinking abilities. Most, for example, believe that they have a fairly clear conception of what it is like to be arrested, since they have seen so many arrests on television. But few have first-hand experience with arrest procedures that could be used to compare with the television images. Television even has impact on the manner in which certain occupational groups are perceived by the public and how those groups perceive themselves. A group of small-claims court judges in Jackson, Mississippi, for example, recently demanded of their supervisor that they be supplied with black robes as a replacement for their sport coats and ties. The reason? If Judge Wapner, on "People's Court" wears a robe, then they should as well!

The irony is that, while television occupies more waking hours than any other single activity, it has virtually no place in the schools and libraries which are responsible for teaching critical and skillful information use. Despite a flurry of misguided activity in the 1950s and 1960s, the American public schools and libraries have—for all practical purposes—found no room for commercial television in their day-to-day operations. While the schools continue to devote their energies to developing critical reading skills (despite the fact that recent polls suggest that Americans read no more than one book per year), and academic libraries continue to provide storehouses of printed information, no institution has emerged which takes seriously the task of developing

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critical skills in television watching. Apparently, school boards and administrators believe that interpreting visual information and judging the accuracy of television portrayals of events are instinctive and require no formal training. This nation has become one in which access to information, ideas, values, and wisdom is in the control of an exceedingly small number of television producers and advertisers, with no counterbalancing institution which can effectively bring into question the underlying assumptions and biases of that small but powerful group.

### **Interactive Technologies in the Library**

In this larger context, the inevitable emergence of interactive television poses a series of problems for both our schools and our libraries which demand our attention. Many libraries are struggling with the relatively minor problem of finding a role in the present craze over videocassettes and videocassette recorders, where often it is difficult to compete with private "libraries" of videocassettes. But as the interactive and chip-based technologies are used more widely, finding appropriate and meaningful roles for them in libraries becomes urgent. The influence of passive television is frightening enough, but the potential power of *interactive* television in shaping attitudes, values, and ideals is orders of magnitude greater, raising the specters of *1984* and *Fahrenheit 451*: totalitarianism, mindless conformity, and antibookism, where no institution or individual would think to question the unilateral authority of the omnipresent, interactive television screen.

Furthermore, the most likely developments in chip technologies over the coming decades would suggest that academic librarians will have to rethink some of their basic assumptions on the library's role in the information-distributing process. As more homes gain access to computerized databases, as home computers gain the power to hold larger quantities of information, and as the private sector continues to search for larger profits in the information storage and retrieval realms, libraries face a serious threat to some of their most long-standing functions in American society. As electronic media increasingly take their place as the major source of information, they pose the threat of turning what we now value as "libraries" into little more than museums for an outdated information technology: the printed word.

As we face these potential challenges, four primary guiding principles seem to be crucial to the overall success of libraries in surviving the transitions sure to be brought on by the chip revolution:

1. It will do no one any good to proceed as if the chip revolution were merely a temporary fad that could be ignored. Above all else, libraries will have to take an active role in acquiring, using, and guiding the development of interactive electronic technologies lest they find themselves relegated to a set of functions that remove them from their central place in providing access to information, ideas, values, and wisdom.
2. It seems obvious that academic librarians will be in no position to have any influence on the development of interactive technologies unless they quickly become more knowledgeable and competent in the uses of those tools. Unless library schools begin to stress the importance of these technologies, and begin educating and training all professionals in their use, it is all too likely that academic librarians will be isolated from the decisions involved in implementing those technologies.
3. As chip technologies spread, it becomes increasingly important for libraries (and schools) to play an active role in helping the American population to become *critical* users of electronic, information-related technologies. Without such a major effort on the part of public institutions, the likelihood is high that most of what Americans know and believe will be derived from private institutions whose major concern is for profit, rather than for independent and critical appraisals carried out by an informed public.
4. There is a function which libraries have performed since their inception but which has literally no equivalent in a world where information storage and retrieval occurs solely or primarily through electronic means—i.e., “browsing.”

### **Browsing in the Twenty-First Century**

Fantasizing and carrying forward the developments just described into the twenty-first century, it is not difficult to arrive at a scenario in which virtually every American home is equipped with interactive television tied via telecommunications networks to central computers which hold the accumulated knowledge and wisdom of human kind. In such a “wired” society, an individual can call up any information, at any time, from home. Whether searching for news, entertainment, or education, the latest research papers in a highly technical field, or the results of last night’s football game, that information may be called up from home with no need for a trip to a building known as a “library.” All of the information a person might ever deem useful for any purpose will be readily available in convenient form, and will require only some idea of

what is being sought so that it can be pulled out of one database or another.

In such a world, however, we will have lost one of the most powerful and stimulating experiences that those of us who have used libraries often can gain from our frequent trips to those stacks of printed materials—i.e., browsing. When I was an undergraduate, some of my most valuable hours were spent browsing in a very large academic library. As I wandered through those stacks of books, my eyes would scan titles, authors, and subjects that I had never dreamed existed. I could glance through an original edition of Thoreau's *Walden* and then, moments later, find myself fascinated by the cover of a book I'd never heard of. I could go in search of a particular work of Edgar Allen Poe, only to find that the library held in its collection everything that Poe ever wrote, and then find myself spending the next month impelled to read it all. I could walk through dimly-lit rows of volumes upon volumes without anything seeming to impel my searching besides a raging curiosity. Had you asked me what I was looking for, I could only have said: "I don't know, exactly, but I'll know it when I find it."

For those of us who have spent large portions of our academic lives browsing the library stacks, the experience ranks high among the joys of learning, and deserves special attention in a society that seeks to base its life on the informed choices of its citizenry. It would not be an exaggeration to claim that the very course of my academic career has been shaped substantially by the times I have spent browsing through books in libraries, looking for something that I could not identify by name or subject but could always walk away with when I found it. There must be at least 200 books which had major influence over my thinking, but which I would never have found if I had known in advance what I was looking for.

As we jump headlong into the age of computer-based information systems, my concern is less with making sure that we develop databases that enable us to find the information that we are looking for, and even less with making sure that we can receive the information that a select group of database developers want us to have. The economics of the chip revolution are almost certain to provide us with those benefits, regardless of what stance American librarians take toward interactive electronic technologies. But what institution besides the library gives full range to the benefits of browsing? Where, except in a library, can I fulfill that thirst for knowing which has not yet developed its specific direction but seeks something that will be quenched only when I chance upon it?

The choices that face us in adapting to and incorporating chip technologies will be many and crucial over these coming decades, but

none seem to me to be more central than the question of how we preserve for ourselves the ability to browse in an electronic environment which makes such activity difficult if not impossible. If we find ourselves in a world some thirty years from now, where we can find any information that we want, but cannot look around aimlessly at what there is to know, we may well have thrown the baby out with the bathwater.

What I am suggesting is that many of our most fundamental institutions—including libraries—will have to take an active role in developing interactive technologies in their settings. It will serve no purpose for librarians to hope that chip technologies will be a passing fad, nor will it be advantageous to wait passively as manufacturers make decisions on *how* chip technologies will be used in libraries. On the other hand, if librarians begin to adapt interactive technologies to libraries' terms, the highest and most fundamental purposes of the library system may have been preserved and extended through technologies that might otherwise have eliminated them.

# Video-Based Information Systems in Academic Library Media Centers

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GEORGE L. ABBOTT

JUST A LITTLE MORE than ten years ago a revolution in video-based technologies began. About that time most academic library media centers consisted primarily of sound recordings for language instruction, poetry readings, and dramatic performances. If the center served a curriculum resource function it frequently contained filmstrips, slides, kits, and other materials for teacher education programs. Some centers also provided equipment distribution, graphics services, and film libraries. The use of video in libraries was embryonic. According to a 1977 SPEC flyer: "While there is increased recognition of nonprint materials as research tools, they are likely to remain minor collections at many academic research libraries for the foreseeable future."<sup>1</sup> The documents contained in SPEC Kit no. 33, "The Integration of Nonprint Media," were collected from ten Association for Research Libraries (ARL) libraries and covered all aspects of nonprint media.<sup>2</sup> Among the video services mentioned were video recordings of classroom lectures, videotape group simulations for psychology class review, commercial videorecordings, instructional television, cable distribution on campus, and some equipment handling. Only one document mentioned videodisc.<sup>3</sup> In 1980, Arlene Farber Sirkin noted the reluctance with which academic libraries were approaching video services. The chief reason given was that of inadequate funding.<sup>4</sup> And in 1981, S.D. Neill stated: "University libraries were divided in their response to the nonprint media, some refusing to deal with them at all."<sup>5</sup>

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There were, however, some pioneering activities in which academic library media centers began to incorporate video among their services. Initially there were the videotape lectures and other "talking heads" programs. Collections of videocassettes of commercially produced films and television documentaries were starting to become available. In 1968 the Joint University Libraries (now Vanderbilt University Library) in Nashville, Tennessee began the Vanderbilt Television News Archives. This consisted of the weekday evening newscasts of the three major television networks and continues today with expanded coverage of presidential addresses, news specials, and some news documentaries.<sup>6</sup> In the mid-1970s video collections began to grow. The University of Tennessee at Knoxville added 334 videocassettes to its collection during 1975-76. This was almost triple the existing collection of 133 videocassettes.<sup>7</sup> And in 1976 R. Kent Wood began the Utah State University Videodisc Innovation Projects. Through these projects the first tests were conducted on the applications of videodisc technology for library instruction and indexing.<sup>8</sup>

Video-based information systems providing more powerful capabilities were still in the research and development stage. These systems encompass interactive and digital videodisc, videotex, satellite broadcasting, and expanded uses for videocassettes and cable television in an interactive mode. The first uses of these newer technologies was for programmatic information (full video with motion, such as recordings of films) but today they are increasingly being used in an interactive mode and for mass information storage and retrieval. The optical digital disc, which will be discussed later, has a storage capacity of 2 gigabytes (2 billion characters) or the equivalent of over 1 million pages of double-spaced typed text.<sup>9</sup>

### **The Role of Library Media Centers**

Library media centers are ideally situated to be the focus of use for video-based information systems. Media centers contain the equipment—television monitors, videocassette and videodisc players, microcomputers, computer graphics terminals, and cable distribution systems—and the staff trained in the use of technology in education. Although the media center will most often not house and administer all of the services discussed here, the media center can serve as a valuable resource to other library units in planning and implementation. Video equipment is costly and any multipurpose uses that can be made of this equipment are to the benefit of the budget-conscious library. With the blurring of technologies, the media center is becoming the integrating

site bridging the transition for libraries to video-based information systems.

### **Videodisc and Optical Disc**

Among the first videodisc demonstrations in the information community were those at the 1975 Association for Educational Communications and Technology Conference in Dallas, Texas and the 1976 American Society for Information Science Annual Meeting in San Francisco. Other developments about the same time were the formation in 1975 of the Video and Cable Communications Section of the Library and Information Technology Association—a division of the American Library Association—and an ASIS program session in the mid-1970s on CEEFAX, an early trial by the British Post Office in the area of videotex.

Videodisc and optical disc applications for libraries are expanding rapidly. The term *videodisc* is usually used to indicate analog recording of a visual image with optical disc being defined as digital recording of either image, sound, or data. Frequently in the literature, a distinction is not made and “videodisc” is used as a generic term. Although standardization is still a question with as many as eight different styles of discs,<sup>10</sup> it is likely that a clear direction will emerge within the next year. The various laser-style discs are the most versatile with capability to store information in analog form as full-motion video with audio, still-frame video or audio only and in digital form as data, digitized high-resolution images, or audio; or any combination of these.<sup>11</sup> Capacitance Electronic Discs (CED) are useful only for full-motion video and have no effective still or random access capabilities. Videodiscs can be used for programmatic information, as slide libraries, as interactive video for programmed instruction, for preservation of images, and as mass storage devices. In 1982 the Library of Congress (LC) began an Optical Disk Pilot Program. This program was divided into two major areas, the nonprint project using analog recording and currently available equipment and the print project using digital technology with custom-made equipment.<sup>12</sup> On 15 June 1984 LC made available for public use the first analog disc from its nonprint project. This disc and viewing equipment were installed in LC's Prints and Photographs Reading Room. The disc contains almost 40,000 photographs, posters, architectural drawings, and other pictorial items from LC's collections.<sup>13</sup> The print project is primarily concerned with image preservation. Exact images of printed text are digitized and stored on the disc at a resolution of 300 dots/inch. The resultant image on playback is a replication of the original type style and graphics. The storage capacity is from 10,000 to 15,000 pages of text per disc.<sup>14</sup> Other disc projects which record digital data have capa-



bilities of over 1 million typed pages. Another analog videodisc project is NASA's "Space Disc." This series of laser discs contains several thousand color photographs, numerous video and motion picture sequences, and computer-generated data from the space shuttle missions.<sup>15</sup>

The newest entry in the disc field is the CDROM (Compact Disc Read-Only Memory). The format is the same as the compact disc currently used for audio. It is 4.72 inches in diameter and can hold 600 megabytes.<sup>16</sup> Indications at this writing are that CDROM discs will become stand-alone databases replacing some of the current online database usage. Evidence of this is several announcements of databases on disc. International Standard Information Systems (ISIS) has signed an agreement to develop compact laser discs containing the ERIC database and a second agreement for a subset of PsycInfo, produced by the American Psychological Association. ISIS expects to sign several others in the near future.<sup>17</sup> Gaylord Bros., Inc. has announced the purchase of Library Systems and Services, Inc. (LSSI) and will market the LSSI MARC laser videodisc (twelve-inch variety).<sup>18</sup> The Library Corporation demonstrated its Bibliofile—a CDROM containing over 1 million MARC records—at the ALA Midwinter meeting in Washington, D.C., 5-10 January 1985; and at the 1984 annual ALA meeting, Carrollton Press demonstrated Marvls (MARC and REMARC Videodisc Library System). Other companies including CL Systems, Inc.; BRS; and Geac have announced and or displayed systems. By year's end the activity will no doubt double.

Several companies are developing players for these discs with the most exciting being the Pioneer CLD-900 which is capable of accepting twelve-inch laser, eight-inch laser, and the compact disc in the single player. The cost of the unit is \$1200.<sup>19</sup> For CDROM only, the Philips (Model CMD-1) is targeted to cost about \$1000. Sony, Hitachi, and others have all announced players in the same price range with prices expected to drop slightly.<sup>20</sup>

Possible library applications for laser discs range from the LC projects to local online catalogs to the replacement of large microform collections. As early as 1981<sup>21</sup> and 1982,<sup>22</sup> there were suggestions that discs would replace COM (Computer Output Microform). Disclosure, Inc. is developing LaserDISCLOSURE for disseminating copies of SEC filings (10Ks, 10Qs, and annual reports).<sup>23</sup> This and similar developments would suggest that discs are a viable alternative to conventional microfiche as well. Video and optical discs are film libraries, slide libraries, music libraries, microform libraries, data libraries, and interactive program instruction libraries—all playable with some of the

same equipment. Video- and optical discs are not everything, but they do have enormous capabilities.

### **Videotex**

Another very powerful video-based information system is videotex. Videotex is still very much in a state of development and expansion. What is videotex exactly? The definition is not clear. Some writers consider online databases—the type found on the Source, Dow Jones, and CompuServe—to be videotex. Others are much more restrictive and include requirements for color video and/or graphics.<sup>24</sup> While the concept behind videotex is similar to that behind Dialog or BRS, I prefer to make some distinctions. For the purpose of this article, videotex is defined as a low-cost, easy-to-use, two-way information system using video display and computer storage. A related technology, teletext, is one-way and is usually broadcast. Its storage capacity is more limited than that of videotex.

Possibly the first use of videotex by a library agency was the Channel 2000 experiment, a Columbus, Ohio videotex trial conducted in 1980 by the OCLC Research Department. As part of this experiment the Public Library of Columbus and Franklin County made available a video catalog of library holdings. Other services available were a video encyclopedia, regional and community information, and home banking. A report on Channel 2000 states, "viewdata [videotex] services will allow public access through libraries to electronic information in much the same way as books, magazines, and other materials provide access to traditional sources of information."<sup>25</sup> About this same time, the National Library of Australia conducted an extensive study of videotex in a library setting concentrating on libraries as information providers.<sup>26</sup> Within the past three years Viewdata Corporation of America began its Viewtron service in south Florida. For this system and for Keycom Electronic Publishing's KEYFAX National Teletext Magazine, ALA is providing reviews from *Booklist* and *Openers*.<sup>27</sup> Libraries are being looked to as information providers for videotex systems. This is only reasonable since libraries currently are primary information providers in nonelectronic forms.

Speaking on videotex in a 1978 article, Robert Frederick Smith said:

Like many of the other possible technological innovations for the library, these video systems do much more than displace a traditional library function; they also could fulfill some objectives of the newspaper and show why it may become progressively more difficult to separate library functions from other mass communication services in the future.<sup>28</sup>

A special localized form of videotex is the video kiosk now commonly found in hotel lobbies giving floor plans, meeting schedules, news announcements, and community information. This technology is ideally suited for point-of-use library instruction programs.

### **Other Video-Based Information Systems**

In 1978 Robert Frederick Smith predicted: "By the 1990s, video transmission [using slow-scan television] of [interlibrary] loaned materials will, in fact, be the norm."<sup>29</sup> This technology, slow-scan television, was demonstrated at the 1983 LITA National Conference in Baltimore, Maryland; and while there is the possibility of its use in interlibrary loan activities, especially for the vast collections now held by libraries, new trends in electronic publishing may offer other options for the future. Not as flashy as the newer video technologies but more often found in academic library media centers are videotapes supporting the instructional program. Recent developments in videotape editing and videocassette players allow for greater interactive use of the medium. An important advantage of interactive videotape is the ability to easily update programs.<sup>30</sup> Other video-based information systems—including computer graphics, cable and satellite transmission—also have library applications. According to Smith: "Satellite communication poses a tremendous opportunity for the library in the 1980s."<sup>31</sup> He notes teleconferencing possibilities and direct satellite broadcasting. The topic of computer graphics in libraries was the subject of the president's program at the ALA 1983 Midwinter meeting in San Antonio, Texas. Many library media centers are already active in these areas and more are becoming active as libraries reevaluate their service goals and objectives.

### **Limiting Factors**

One limiting factor in increased use of many video-based systems is the resolution of the output device. The standard U.S. television set is composed of 525 lines of resolution. This is not satisfactory for displaying fine details in illustrations or small print. The maximum legible information which can be displayed on the standard television is about 500 characters or one-fifth of an eight and one-half by eleven inch page.<sup>32</sup> Current work with HDTV (High Definition Television) uses 1125 lines, dramatically improving the resolution of the image. HDTV units are especially useful for image preservation projects like LC's Optical Disk Pilot Program. A further limiting factor to HDTV development is transmission bandwidths. HDTV cannot be broadcast using

existing channel frequencies. Cable television using coaxial cable can carry HDTV, but fiber optics can handle it better.<sup>33</sup> Since many video-based systems of interest to libraries will be on-site stand-alone ones, broadcast limitations are not a problem.

## **The Future**

Perhaps the most difficult task is choosing the right technology. In the early 1970s electronic video recording (EVR) was introduced and was adopted by several libraries as an exciting new technology. Within five years EVR had all but vanished and is probably no longer in use anywhere. More recently RCA ceased production of the CED videodisc player. With the CED players no longer being manufactured it is likely that within five years CED will also be a dinosaur. Where is quad sound? How about Polavision? A 1981 *New York Times* article discusses some of these failures.<sup>34</sup> Why does this happen? How does the media specialist avoid costly errors? With the rapid changes and developments in technology it is not possible to make the right choice every time. If a technology works and serves users for up to a five-year period, it is an acceptable choice. To help make this choice, a conceptual understanding of the technological capabilities of a technology is desirable. More important is a detailed understanding of the requirements of use. According to Joseph Becker: "What the librarian needs is an intellectual framework within which to evaluate the emerging technology in order to place new developments and trends in context."<sup>35</sup> Becker further states: "Technology provides opportunities; to be of use to a library, it must be incorporated into a systems solution for the problems of the library as a whole."<sup>36</sup> New technologies will always be created. Whether they succeed in a given library will depend on their doing a better job than existing technologies—i.e., more economically or with additional applications areas. Using careful planning, an academic library media center must be prepared to integrate those services which meet the needs of its users in the growing complexity of the information and video age.

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An issue editor proposes the theme and scope of a new issue, draws up a list of prospective authors and articles, and provides short annotations of the articles' scope or else gives a statement of the philosophy guiding the issue's development. The issue prospectus is examined by the Graduate School of Library and Information Science (GSLIS) Publications Committee and requests for clarification or modification may be made before the prospectus is approved.

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